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PRINCIPAL MEDICAL OFFICER'S OFFICE,
ENTEBBE, UGANDA.

30th May, 1924.

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SIR,

I have the honour to submit, for the information of His Excellency the Governor and for transmission to the Right Honourable the Secretary of State the Medical Report on the health and sanitary condition of the Uganda Protectorate for the year 1923, together with the Returns, etc., appended thereto.

Certain alterations have been introduced for convenience of reference in the arrangement and form of this Report, which I hope will meet with approval.

I have the honour to be,
Sir,
Your obedient servant,

J. HOPE REFORD,

Principal Medical Officer,
Uganda Protectorate.

THE HONOURABLE
THE CHIEF SECRETARY TO THE GOVERNMENT,
ENTEBBE.

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COMPARATIVE GRAPHS OF
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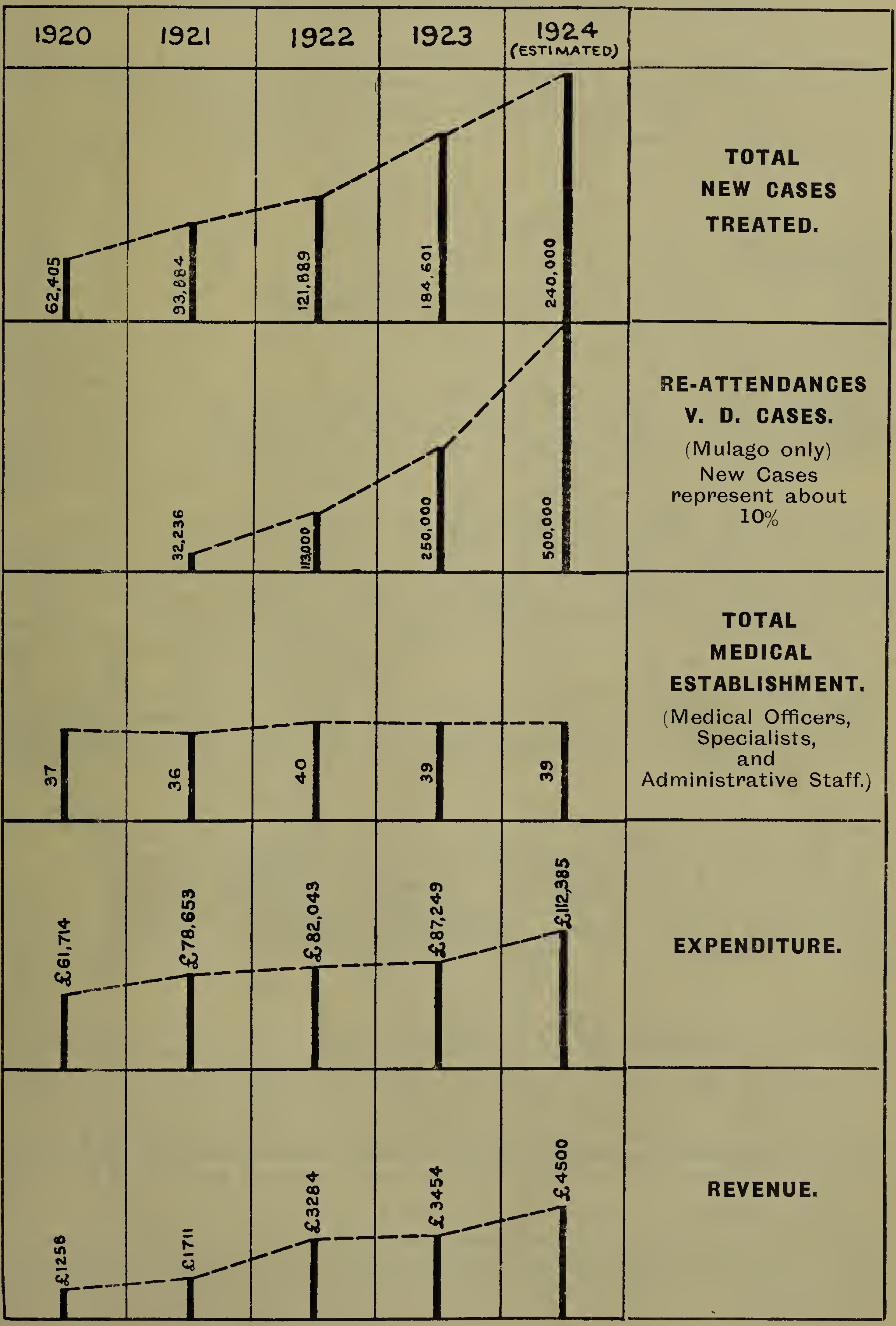
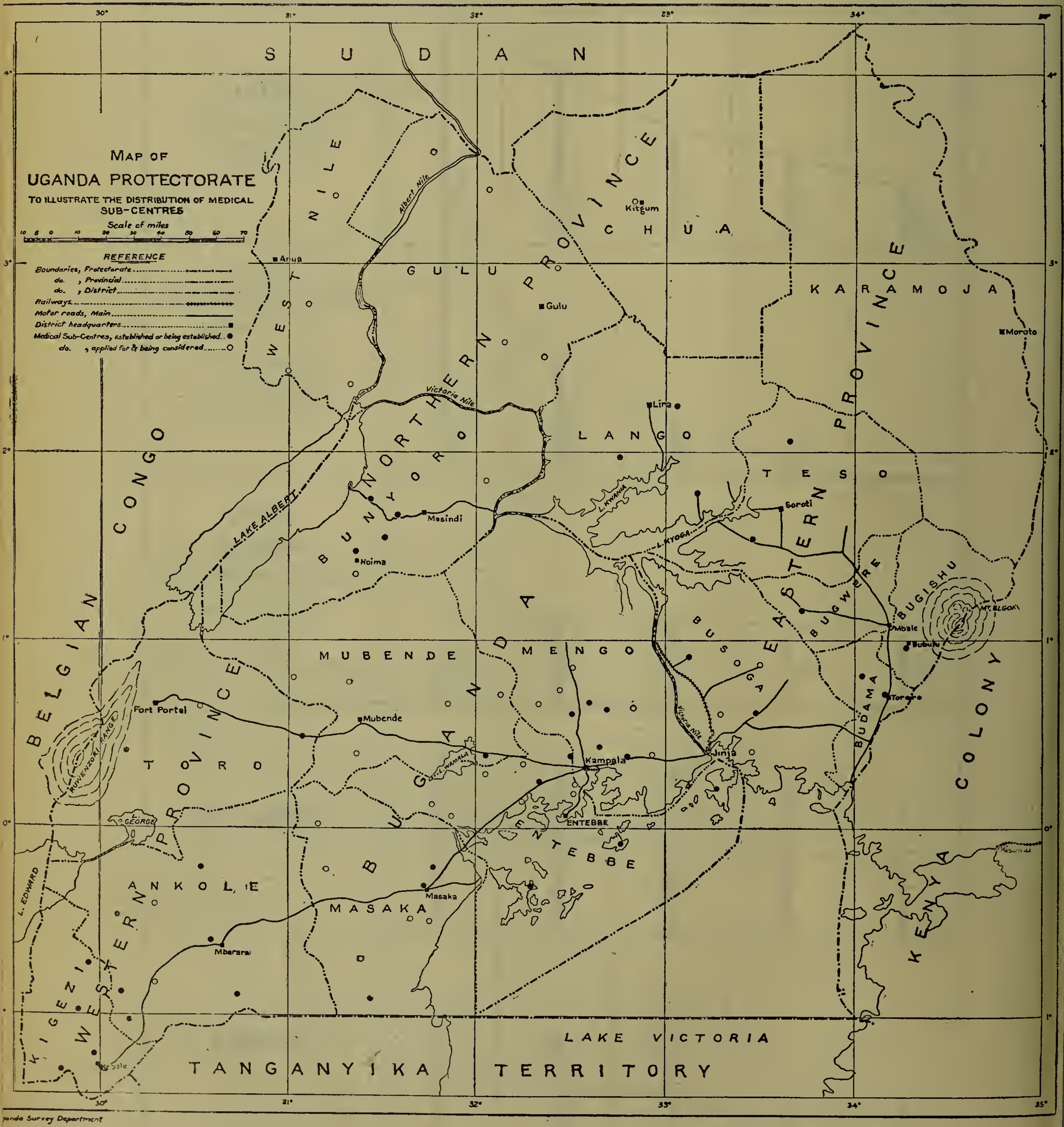


MAP SHEWING DISTRIBUTION OF SUB-DISPENSARIES.



anda Survey Department

UGANDA PROTECTORATE.

ANNUAL MEDICAL REPORT

FOR THE

YEAR ENDED 31st DECEMBER, 1923.

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Section I.

GENERAL REVIEW.

Work of the Year.

The progress of medical work during 1923 has been marked by steady expansion, and the health conditions of the Protectorate have shown gratifying improvement both as to vital statistics and in the general health of communities and relative freedom from grave epidemics.

The attached graphs (page 3) illustrate the expansion of medical work in relation to staff and expenditure as compared with preceding years. It will be seen that a total of 184,601 cases have received treatment. These include all new cases—Europeans, Asiatics, and natives, for all diseases, throughout the Protectorate. Among these cases there were 747 deaths. The corresponding figures for 1922 were 116,660 cases with 588 deaths.

Wide expansion has taken place in the treatment of native diseases, and particularly of venereal diseases. Prolonged courses of treatment are necessary, and the number of re-attendances at Mulago Hospital alone with its surrounding centres amount to 250,000.

Expenditure.

Total expenditure, apart from medical buildings under Development Loan, has increased to £87,250 from £82,043 in the preceding year, and a further increase to £112,385 is estimated for 1924 to enable this expansion in medical work to be maintained. Revenue shows a slight advance, which it is hoped will be progressive.

Staff.

It will be noted that our total medical establishment of 39 Medical Officers, Specialists and Administrative Staff remains practically stationary. This limitation of staff has thrown a high proportionate volume of work upon all grades of medical personnel, and this has been increased by the number of vacancies on establishment that existed during the year. On the 1st January, 1923, there were eight vacancies, and on 31st December six vacancies remained unfilled.

The establishment of Asiatic Medical Assistants was 38, being one less than the previous year. Trained native medical attendants, apart from menial staff, have been increased in number to 400 from 350 in 1922. It is proposed to utilise the services of trained natives in increasing numbers in future years as facilities for proper training increase, and as the sub-dispensary scheme for treatment of natives, which will be referred to later, becomes more fully developed.

VITAL STATISTICS.

Population.—The total recorded births and deaths for the five Kingdoms of Buganda, Busoga, Bunyoro, Ankole and Toro are shown in Section III (A), Tables I—III. The total population of these Kingdoms is 1,475,609 representing under 50% of the total population of the Protectorate.

It is satisfactory to note that the total births in these Kingdoms exceed the total deaths by 3,995 as compared with an excess of 3,979 recorded for 1922. In Buganda the total deaths exceed the total births by 624. This, however, compares favourably with the excess of 1,458 deaths over births recorded for 1922. In Bunyoro also the deaths exceed the births by 856, compared with a corresponding excess of 891 in 1922.

Birth-Rate and Death-Rate.—The combined returns for these five Kingdoms show the high birth rate of 24·86 per 1,000 compared with 23·51 per 1,000 for 1922, and a death rate of 22·15 per 1,000 compared with 20·80 for 1922.

Still-Birth Rate.—The still-birth rate continues to be very high particularly in Bunyoro, but there is some satisfaction in noting that this rate shows a small but steady improvement during the past four years. The total number of still-births recorded is 4,818 compared with 5,066 in 1922, giving a still-birth rate of 11·61% compared with the still-birth rate of 12·79% for 1922.

Infantile Mortality Returns.—Infantile Mortality Returns have been received for Buganda Kingdom and are now recorded for the first time. (*Vide* Appendix III on V.D. by Dr. Webb). The rate for Buganda Kingdom (population 789,124) works out at 226·9 per thousand births. This rate is considerably lower than was expected. The records can hardly be regarded as accurate, being a first effort at Infantile Mortality Returns from native records, but they form an interesting and valuable index, and efforts are being made to render them more complete and accurate in future returns, and to extend them to other Provinces of the Protectorate.

GENERAL HEALTH.

The health of the community has on the whole been good compared with previous years.

European Officials.—Among European Officials 791 cases of sickness with 2 deaths are recorded, compared with 884 cases with 6 deaths occurring in 1922. Both cases of death were due to Blackwater Fever. The principal causes of sickness were Malaria (333 cases), Digestive troubles (98), Injuries (67), Respiratory (32), Influenza (30), Dysentery (7), Blackwater Fever (4).

European Non-Officials.—Among European Non-Officials 1,052 cases of sickness are recorded with 5 deaths and 2 cases of suicide, compared with 1,024 cases of sickness with 18 deaths recorded for 1922. The principal causes of sickness have been Malaria (353 cases), Digestive (169), Injuries (86), Respiratory (66), Influenza (31), Dysentery (11), Blackwater Fever (6). The causes of death were Blackwater Fever (1), Cerebral Malaria (1), Myelocythæmia (1), Heart Disease (1), Acute Basal Meningitis (1), Suicides (2).

Asiatic Officials.—Among Asiatic Officials 1,587 cases of sickness are recorded with 2 deaths, compared with 2,338 cases with 4 deaths in 1922. Both cases of death were due to Blackwater Fever.

Natives.—Considering the enormous mass of natives to whom medical treatment is still inaccessible and for whose sickness accurate records are unobtainable, the best index of the health of the native community is vital statistics. It has been seen above that on the whole these statistics have been decidedly favourable compared with those for 1922, and that the trend for recent years has been a steady improvement resulting in an increase in births over deaths during the past two years. The returns for Bunyoro and Buganda Kingdoms are still unfavourable, but in both these Kingdoms a gratifying improvement is taking place which it is hoped will be progressive. Special efforts are being made, particularly in these two Kingdoms, to extend medical services generally and to combat venereal disease, the prevalence of which has such devastating effects, especially on the birth-rates. The improvement in health returns for the year owes something, we hope, to these measures, and also to the Maternity and Child Welfare Schemes conducted by the Church Missionary Society and Mill Hill Missions under Government auspices. The abolition of Kasanvu labour in Buganda may have contributed towards a lowered death-rate in this Kingdom. The relative freedom from, and the suppression of, grave epidemic diseases throughout the Protectorate has undoubtedly contributed largely to the generally improved death rates of the country.

Epidemics.—The prevalence of epidemic diseases is dealt with in Section V, Sanitation. We have been fortunate during 1923, as well as during the previous year, in enjoying a relative freedom from the invasion of grave epidemics of plague, small-pox, cerebro-spinal meningitis, or influenza, which are always a menace to the health and the material prosperity of the country. These diseases are always endemic, particularly in the prosperous areas of Buganda and the Eastern Province. Frequent minor outbreaks of plague have occurred, and great credit is due to the Sanitation Staff for their prompt and effective suppression.

Special diseases are dealt with in detail in Section III (B).

Blackwater Fever.—Blackwater fever continues to be a fatal disease for Europeans and Asiatics. 74 cases are recorded with 17 deaths, compared with 83 cases with 14 deaths in 1922. (*Vide* Appendix I).

Enteric.—Twenty-six cases of enteric have been reported during the year, 3 in Europeans, 5 in Asiatics, and 18 in natives, with two deaths—both in natives. Ten cases of the enteric group were recorded in 1922. Typical clinical cases in natives were all traced bacteriologically to *B. Typhosus*, but infection of natives with *B. para* A and B have also been observed. Ten cases of enteric group were recorded in 1922.

We are fortunately free from serious epidemics of water-borne diseases. The possibility of their occurrence must, however, always be borne in mind. In connection with the relative immunity of natives the increasing number of cases of enteric now appearing is significant, and investigations are now in progress at the laboratory to determine the prevalence of diseases of this group. (*Vide* Enteric Report, Appendix II).

Leprosy.—Leprosy is a widespread disease throughout the country, especially in Eastern Province. Voluntary treatment camps are being established where patients are well housed and fed and cared for. At Barr Leper Camp in Lango lepers have been under treatment during the year, and very satisfactory results have been reported under treatment with weekly injections of Moogral. A number of the patients have returned to their homes greatly improved, if not cured, and many voluntarily return for further courses of treatment. Compulsory segregation is found impossible at the present stage. It is essential to make the treatment popular to induce large numbers of the victims to come in voluntarily in the future. It is intended in the future to establish leper settlements in the proximity of all district sub-dispensaries where the patients can be supervised and receive regular treatment followed up under the card system of records by the native attendants in charge.

Tuberculosis.—Only 29 cases are recorded with 3 deaths, compared with 15 cases with 4 deaths in 1922. There is reason to believe, however, that tubercular diseases are very much more widespread among natives than has hitherto been supposed, and with improved hospitals and methods of diagnosis it is expected that this will prove to be the case.

Cancer.—With extended surgery and pathological diagnosis malignant diseases, though not widespread in the European sense, are found to be by no means uncommon among natives.

Helminths.—Helminthic diseases are widespread throughout the country. *Ankylostomiasis* is universally prevalent, and special investigations have been carried out as far as staff would permit concerning the incidence and possible prevention of this disease, and of *bilharziasis* in the West Nile district by Dr. Rawson, whose interesting report is included in Appendix VIII. *Dracunculus* appears to be increasing in Northern Province, particularly in the Chua district.

Yaws.—This disease is very prevalent and causes much disability, especially in Eastern Province. Its comparative rarity in other Provinces is remarkable. Differential diagnosis from syphilitic manifestations is in many cases difficult, but it is undoubtedly localised in its distribution. 3,376 cases with 6 deaths are recorded, compared with 819 cases with 1 death in 1922. The ease and rapidity with which it responds to treatment enable great disability and suffering to be relieved, as well as impressing natives with the efficacy of medical treatment. In Bukedi, where the disease is particularly prevalent, an intensive itinerary campaign has been carried out by Dr. Vassallo with great success, with the result that at Mbale and three large adjoining areas the disease has practically been stamped out.

Venereal Diseases.—Our efforts for combating these widespread and devastating diseases have been unremitting during the year. An intensive campaign has been extended to Bunyoro, and a start has been made in Eastern Province stations at Mbale, Soroti and Lira, and in Western Province at Mbarara and Toro.

Dr. Webb's report on the progress made at Mulago and surrounding centres of Buganda is appended (Appendix III) with an interesting covering review by Major Keane, D.S.O. Details of work carried out and progress made towards expansion will be seen from these reports.

An important reorganised policy has been put into effect during the year under which the intensive anti-venereal campaign previously conducted from Mulago over a limited area has been co-ordinated with the general native medical work throughout the whole country. The objective was to devise a scheme whereby the benefits of the anti-venereal campaign being conducted so ably at Mulago might in a practicable manner and at a cost which would not be prohibitive be extended to all suffering natives of other tribes. The Mulago principles of anti-venereal work have been combined with those of existing district hospitals and dispensaries, so as to extend the scope and attain a higher standard of efficiency both of venereal work and of general native medical work throughout the Protectorate.

It can fairly be claimed that the practicability and success of this scheme have already been amply demonstrated by its application during the year at certain centres in every Province of the Protectorate. At Mulago and at all hospitals and dispensaries in the country all native diseases as well as venereal disease are now being treated by one staff. The results already achieved are highly satisfactory and augur the greatest success for the future extension of this policy.

At *Mulago*, which was formerly a purely venereal hospital but is now converted to a general native hospital, and at all its auxiliary centres, a striking extension of work has been achieved under the control of Dr. Webb and his staff, and its efficiency has been fully maintained. During the year 11,382 new cases were treated and over 250,600 re-attendances were recorded, as compared with 6,781 new cases and 113,158 re-attendances in 1922. Most of these new cases (8,225) have been venereal during this first year. There has been a daily average of 135 in-patients in the wards, and an average of 11 operations weekly, many of these being major cases.

In addition to Mulago being now a general hospital and the headquarters of Venereal Diseases Measures activity, it subserves a further important function as a training centre and depôt for native assistants and dressers. An effort is also being made to post newly arrived medical officers at this hospital in rotation for a period of 6 months to familiarise them with natives and native diseases, and their methods of treatment.

The re-organised scheme has been inaugurated in all other Provinces, central district hospitals with sub-dispensaries serving for the treatment of all diseases, and prominence being given to venereal diseases in proportion to their predominance. In all cases very gratifying results have been achieved notably at Mbale in Eastern Province, at Hoima in Bunyoro, and at Mbarara in Western Province.

At *Mbale* (Eastern Province) and its 4 sub-dispensaries Dr. Vassallo has carried out extensive general and anti-venereal work under the new scheme with striking success. His returns for the year show 52,425 new cases and 166,628 re-attendances compared with 7,365 new cases (re-attendances unrecorded) for 1922. He has had a daily average of over 200 cases in his temporary hospital wards and shows an extensive operation list of over 25 cases weekly, about one-third of which are major operations. His successful campaign against Yaws in this district has already been referred to (*page* 8). A large native permanent hospital is to be built at Mbale during 1924.

At *Hoima*, Bunyoro, Dr. Lee was posted in June to initiate an anti-venereal diseases campaign together with general medical work in Bunyoro, where 90% of the natives are reported to be infected, and where the population has suffered an alarming decrease during recent years. He has already achieved conspicuous success in the combined work, and was at the end of this year giving efficient treatment to over 350 patients daily—chiefly venereal. Provision has been made for extended permanent hospital buildings and sub-dispensaries during 1924.

At *Mbarara* (Western Province) Dr. Langton was posted in January from Mulago. He has extended the general medical work and particularly venereal treatment with such success that at the end of the year over 100 patients were being treated at the hospital daily compared with an average of 19 in 1922.

SUB-DISPENSARIES.

We are confronted with the difficult but essential task of extending the scope of medical work so as to embrace all tribes in all provinces with a population of over three million spread over an area of 107,828 square miles. All are similarly afflicted and all merit similar treatment. I am more than ever convinced that the extension of sub-dispensaries, in charge of trained native attendants under the supervision of inspecting medical officers and based on good permanent district hospitals throughout all populous districts of the Protectorate, represents the successful solution of this difficult problem of affording adequate medical treatment to the mass of the native population, the vast majority of whom are still inaccessible to hospital aid. These sub-dispensaries are cheap compared with hospitals, and those already established have proved at once successful and popular both with the natives themselves and with the administration. Twenty-seven have now been established, and there is an increasing and widespread demand for others. It is our policy to continue to establish them as funds, medical officers, and trained native staff are available.

NATIVE MEDICAL SERVICE.

The necessity for a Native Medical Service is becoming increasingly apparent with this expansion of native medical work. The future successful development of the latter is dependent upon the wide extension of these sub-dispensaries, and the most important difficulty with which we are confronted in their extension is the lack of sufficient native attendants trained to the necessary work and capable of being placed in charge.

Training has been going on steadily both at Mulago, at Makerere Training School, and at many of the district hospitals, and much useful material is resulting. We have at present some 400 native medical attendants in various capacities, many of them of inferior type, and it is apparent that great advantages in control and efficiency would accrue from an organised service with definite grades, scales of pay and regulations. With definite terms of service offering a reasonable career for natives joining on small scales of pay, I feel sure that recruiting would be greatly facilitated, both for training at Mulago and other hospitals, and also at Makerere under Dr. Owen.

Fuller consideration will be given to this question during the coming year.

LUNACY.

Improved arrangments for the care of lunatics has been made during the year. Formerly they were accommodated in the Hoima Jail in charge of the prison authorities under medical supervision. Apart from the inherent objections to this system the accommodation provided was insufficient for the proper segregation of different classes of lunatics of different sexes. Arrangements were made early in the year for the withdrawal of prisoners from Hoima to the Central Jail, Kampala, all lunatics including criminal being left at Hoima under medical charge. Accommodation was further augmented by providing additional facilities for segregation of classes and sexes.

The accommodation provided is still very unsatisfactory, however, owing to the lack of proper facilities for the separate treatment of violent and noisy lunatics, and for recreation. Plans have been prepared for extensions and alterations to allow for these requirements, and a sum of £1,000 has been inserted under Development Loan estimates for 1924 to provide for their execution at an early date.

The average number of inmates at the asylum has been 32 during the year.

Maternity and Child-Welfare Scheme.

A re-organised Maternity and Child-Welfare Scheme for training of native midwives and the establishment of district maternity centres has been introduced during the year. The Lady Coryndon Maternity Training School at the C.M.S. Mission, Mengo, and the Mill Hill Mission Training School, Nsambya, together with the respective district maternity centres established from these schools, are controlled by two maternity committees, one for each mission, a government representative (the D.P.M.O., N.S.) being chairman of each committee. Regulations for training, conduct of examinations, the granting of diplomas, and serious questions of discipline are controlled by the Central Midwives Board, of which the Principal Medical Officer is chairman, under the provisions of the Midwives Ordinance. This Ordinance requires revision, and an amended Ordinance will be brought before Council next year. Both the training schools and the district maternity centres are substantially subsidised from Government funds, a sum of £1,500 being provided for this purpose in Estimates for 1924.

Some 15 native girls have been under training at the Lady Coryndon Maternity Training School, Mengo, during the year and 12 at the Mill Hill Mission, Nsambya. Ten district centres have been established associated with the Church Missionary Society, and at most of these centres very useful work has been accomplished in carrying out maternity work and in giving assistance and instruction to expectant mothers. All are under close local supervision, generally of a lady belonging to the mission, who reports to the Mission Maternity Committee.

Invaluable assistance in the training of midwives at the Lady Coryndon Maternity Training School and the control of maternity centres in the field have been rendered by Dr. and Mrs. Albert Cook, of the Church Missionary Society, and in the organising and conduct of the Nsambya Maternity Training School by the Rev. Mother Kevin and Dr. Connolly of the Mill Hill Mission.

Reclamation of Tse-Tse Areas.

The reclamation of the tse-tse areas on the Sese and Buvuma Islands of Lake Victoria has been continued during the year. The reclamation of these islands together with sectors of the mainland riparian zone which were depopulated during and after the great Sleeping Sickness epidemic of 1904-06, was commenced in 1919 and has been successful almost beyond our expectation. Some 11,000 of the remnants of the original population or their families have now been repatriated under strict Sleeping Sickness Rules, and no further outbreak has so far occurred. Under this apparent security there exists some danger of restrictions being relaxed beyond the limit of safety, and measures are now under consideration for tightening up the executive and methods of administrative control.

In inland tse-tse areas similar methods of clearing and control or removal of populations have been adopted as far as practicable wherever the existence of sleeping sickness or the presence of fly has demanded these measures. The efforts of the Sleeping Sickness Staff have been engaged chiefly in the East and West Madi districts, in Chua, and in the Katwe areas, where fly are abundant on all the rivers and littorals and sleeping sickness is endemic among the populations.

In some of these areas, particularly East and West Madi, there has been a disquieting increase in the number of cases reported, although on the whole the reports on progress and control are not unsatisfactory. Complete control of these areas presents exceptional difficulties owing to the extent of country involved and the limitation of supervisory staff. Representations to the administration are now under consideration for District Commissioners to undertake, with necessary additional staff, the executive of all measures of clearing or control advised by the Senior Medical Officer, Sleeping Sickness, in their districts (*vide* S.M.O., S.S.'s Report, Appendix IV).

LABORATORIES.

The Annual Report of the Bacteriologist for 1923 has already been published separately.

A new combined medical and veterinary laboratory is under construction at Old Entebbe peninsula and will, it is hoped, be ready for occupation next year with cold storage plant and petrol gas plant complete. The site is excellent in its isolation and proximity to the lake shore, and the building is admirably constructed.

The activities of the Laboratory have been considerably extended during the year, and close co-operation has been established between Entebbe and the big hospitals at Kampala, all of which supplied valuable material and were frequently visited by Dr. Duke and Dr. Martin for bedside investigations.

The research programme undertaken during the year has included further investigations into *trypanosomiasis* problems; investigations of fæces for the detection of helminth parasites, particularly *S. mansoni*, in natives; the prevalence of Enteric fever among natives; an enquiry into the relationships between *B. abortus* and *B. melitensis* and Undulant Fever in man; the virulence of diphtheria cultures from Uganda sources.

All the venereal bacteriological work is carried out at the Mulago laboratory, as well as much routine diagnostic work of the general hospital, by Mr. Baker under the supervision of Dr. W. L. Webb.

EUROPEAN HOSPITAL, KAMPALA.

The building of the new European Hospital has been completed during the year. It is a very fine hospital consisting of a large central block with two side wings. It provides accommodation for 15 beds, mostly in single wards and includes a maternity block and dental rooms. A block of sisters' quarters and the specialist surgeon's house are situated in the grounds.

Much valuable surgical and medical work has been conducted by Dr. C. H. Marshall and his nursing staff during the year, although this has been somewhat hampered by the construction work in progress.

171 cases were admitted during the year with a daily average of 3·96 in-patients, besides an extensive attendance in the out-patient departments. 67 operations were performed, 20 of these being major operations.

Co-operation has been established between the European Hospital, Kampala, and the General Native Hospital, Mulago, the Specialist Surgeon, Kampala, visiting Mulago weekly or as required for consulting work, while the Mulago Medical Officers assist or consult as required at the European Hospital.

The European Hospitals at Entebbe and Jinja continue to afford excellent service. Provision has been made and plans completed for the building of a new European Hospital at Jinja in 1924 to replace the old building. It is also hoped to build Cottage Hospitals at Mbale and Masindi during the year.

EYE CLINICS.

An eye clinic has been established weekly at the European Hospital, Kampala, by Dr. H. B. Owen, Medical Tutor, Makerere, whose opthalmic services are highly appreciated and have proved of very great value.

Dr. Owen also conducts a valuable weekly eye clinic for natives at Mulago, which is revealing an unsuspected scope for opthalmic work among natives.

ASIATIC HOSPITALS.

A small Asiatic hospital block for 4 beds adjoining the native hospital, Jinja, was presented by Mr. Nanji Kalidas Metha and taken over by Government during the year.

The old native hospital blocks at Nakasero, Kampala, have been reconstructed and converted into an Asiatic hospital and Asiatic maternity block, and will be opened early in the year.

These are the first permanent Asiatic hospitals that have been established by Government in Uganda, with the exception of a small Goan block for three beds at Entebbe, and they should prove of great service.

Education.

A very important advance has been made during the year in extending medical education for natives. Apart from the training as native medical attendants and dressers at Mulago and other district hospitals, referred to above (*vide* Native Medical Service), a beginning has been made at Makerere Training School by Dr. H. B. Owen towards higher medical education of natives, with the object of turning out native qualified assistants approaching the standard of the Indian Sub-Assistant Surgeon.

Acknowledgements.

I have to express my grateful appreciation to all members of the medical staff for their loyal co-operation and excellent services rendered throughout the year. Also to all the nursing sister staff for their devoted work. My thanks are due to the headquarter clerical staff for the efficiency with which they have carried out their very strenuous duties during the year.

We are greatly indebted to Dr. Albert Cook and Mrs. Cook of the Church Missionary Society for their valued co-operation in all the medical work of the country and particularly for their unremitting services in conducting the Maternity and Child-Welfare Scheme associated with the Lady Coryndon Maternity Training School. Our thanks are similarly due to the Rev. Mother Kevin and Dr. Connolly for their valuable work in organising and conducting the Maternity Training School at the Mill Hill Mission, Nsambya.

Entebbe,
30th May, 1924.

J. HOPE REFORD,
Principal Medical Officer.

Section II.

ADMINISTRATIVE.

(A) Staff.

(1) The Establishment for 1923 as Sanctioned in the Estimates was as follows :—

EUROPEAN.

Principal Medical Officer.
Deputy Principal Medical Officer.
4 Senior Medical Officers.
19 Medical Officers.
Chief Sanitation Officer.
1 Sanitation Officer.
3 Medical Officers of Health.
1 Specialist Officer, Venereal Diseases.
1 Pathologist, Venereal Diseases.
3 Medical Officers, Venereal Diseases.
1 Bacteriologist.
1 Assistant Bacteriologist.
1 Senior Medical Officer i/c Sleeping Sickness Measures.
1 Dental Surgeon.
1 Matron.
8 Nursing Sisters.
2 Nursing Sisters, Venereal Diseases.
1 Office Superintendent.
1 Clerk.
1 Storekeeper.
1 Pharmacist.
1 Clerk.
1 Supervisor of Native Inspectors.
1 Superintendent.
2 Laboratory Assistants.
2 Sleeping Sickness Inspectors.

ASIATIC.

1 Assistant Surgeon.
2 Senior Sub-Assistant Surgeons.
22 Sub-Assistant Surgeons.
7 Compounders.
1 Assistant Storekeeper.
1 2nd Grade Clerk.
3 3rd Grade Clerks.
6 4th Grade Clerks.

NATIVE.

A varying number of Native Attendants including :—

Hospital and Dispensary Attendants, etc.
Isolation Hospital and Camp Attendants.
Clerks and Interpreters.
Native Vaccinators.
Plague Inspectors.
Sleeping Sickness Inspectors.
Menial Staff.

(2) SHORTAGES ON ESTABLISHMENT :—

(*a*) *Europeans.*

At the beginning of the year there were the following shortages on establishment :—

1 Senior Medical Officer.
1 Sanitation Officer.
3 Medical Officers.
3 Medical Officers of Health.

During the year five vacancies on the establishment of Medical Officers were created through transfers, termination of appointment and promotions of Medical Officers to the senior appointments of Senior Medical Officers and Sanitation Officer.

Five vacancies for Medical Officers were filled during the year as follows :—One in April, one in May (part time), one in August, one in September, and one in November (part time).

The posts of Medical Officers of Health remained vacant throughout the year.

Vacancies on establishment at the end of the year were as follows :—

3 Medical Officers.
3 Medical Officers of Health.

(*b*) *Nursing Staff.*—Nil.

(*c*) *Asiatics.*

At the beginning of the year there were vacancies for one Senior Sub-Assistant Surgeon and three Sub-Assistant Surgeons. The three vacancies for Sub-Assistant Surgeons were filled during the year.

(3) APPOINTMENTS, CHANGES, ETC., IN STAFF.

Appointments :—

Dr. G. R. H. Chell, Senior Medical Officer, Kenya, to be Deputy Principal Medical Officer	1-10-23
Major G. J. Keane, D.S.O., Specialist Officer, Venereal Diseases, to be Deputy Principal Medical Officer (Native Services).	
Dr. A. T. L. Kingdon, Medical Officer	19- 4-23
Dr. N. Bligh-Peacock, Medical Officer	1- 8-23
Dr. J. C. St. Earl, Medical Officer	7- 9-23
Dr. E. N. Cook, to act as Medical Officer, Fort Portal (part time)	19- 5-23
Dr. Stanley Smith, to act as Medical Officer, Kabale (part time)	1-11-23
Miss W. A. Shambrook, Nursing Sister	19- 4-23
Miss G. M. Hawthorne, Nursing Sister	1- 8-23
Mr. A. E. Baker, Laboratory Assistant, Venereal Diseases ...	19- 4-23
Mr. G. Blackett, Clerk, P.M.O.'s Office	1- 8-23
Mr. H. G. Smith, Clerk, Agricultural Department, to act as European Superintendent, Venereal Diseases, during the absence of Mr. E. S. Smout, on leave	7- 8-23
Mr. E. C. Das, Sub-Assistant Surgeon	7- 3-23
Mr. K. R. Pradhan, Sub-Assistant Surgeon	30- 5-23
Mr. V. B. Pandit, Sub-Assistant Surgeon	13- 6-23

Promotions :—

Dr. J. H. Reford, Deputy Principal Medical Officer, to be Principal Medical Officer 20- 7-23

Dr. H. R. Neilson, Medical Officer, to be Sanitation Officer ... 8- 8-22

Dr. J. E. Hailstone, Medical Officer, to be Senior Medical Officer 9-12-22

Major R. J. A. Macmillan, D.S.O., T.D., Medical Officer, to be Senior Medical Officer 9-11-23

Dr. W. L. Webb, Pathologist, to be Senior Medical Officer ... 9-11-23

Mr. H. Flint, Office Superintendent, to be Confidential Clerk ... 1- 4-23

Mr. H. T. Bott, Clerk, Sanitation Division, to be Office Superintendent, P.M.O's Office 1- 4-23

Transfers :—

Dr. J. A. Taylor, Senior Medical Officer, to Zanzibar, as Principal Medical Officer 11- 3-23

Mr. G. Blackett, Clerk, to Public Works Department as Clerk 7-11-23

Compounder Ahmed Din Ahmedi, to Veterinary Department from 7- 4-23— 6-12-23

Agreement Terminated :—

Dr. H. G. Cimino, Temporary Medical Officer 2- 6-23

Retirements :—

Major C. A. Wiggins, C.M.G., Principal Medical Officer ... 17- 7-23

Dr. R. E. McConnell, Medical Officer 27-10-23

Invalidings :—

Dr. R. E. McConnell, Medical Officer.
Gokal Chand, Sub-Assistant Surgeon.

(4) LEAVE :—The following were on leave during the period stated opposite their names :—

	From		To
Major C. A. Wiggins, C.M.G., Principal Medical Officer ...	1- 1-23	...	17- 7-23
Major G. J. Keane, D.S.O., Specialist Officer, Venereal Diseases	1- 1-23	...	28-10-23
J. M. Collyns, Chief Sanitation Officer	26- 2-23	...	End of year.
G. D. H. Carpenter, M.B.E., Senior Medical Officer, Sleeping Sickness	15- 3-23	...	28-11-23
Major R. J. A. Macmillan, D.S.O., T.D., Senior Medical Officer	20-11-23	...	End of year.
Miss M. Martin, Assistant Bacteriologist	20-11-23	...	End of year.
*R. E. McConnell, Medical Officer	12- 5-23	...	27-10-23
J. H. Neill, Medical Officer	5- 5-23	...	End of year.
S. R. E. Davies, Medical Officer	12- 7-23	...	End of year.
H. G. Cimino, Temporary Medical Officer	17- 3-23	...	2- 6-23
G. S. Bateman, Dental Surgeon	1- 1-23	...	6- 2-23
Miss E. M. Pratt, A.R.R.C., Matron	1- 1-23	...	30- 5-23
Miss D. M. Ivers, Nursing Sister	16- 8-23	...	End of year.
Miss C. M. Beville, Nursing Sister	23- 6-23	...	End of year.
H. Flint, Confidential Clerk	5- 5-23	...	28-11-23
E. C. Haddon, Laboratory Assistant	18- 4-23	...	28-11-23
E. S. Smout, European Laboratory Assistant	6- 8-23	...	End of year.
F. G. Caldwell, Clerk, Medical Dept.	2-12-23	...	End of year.
Ghulam Haider, Sub-Assistant Surgeon	1- 1-23	...	26- 4-23
Karam Dad, Sub-Assistant Surgeon	12- 5-23	...	End of year.
*Gokal Chand, Sub-Assistant Surgeon	18- 2-23	...	24- 9-23
Sohan Singh Sandhu, Clerk	18- 1-23	...	6- 6-23

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* Invalided out of the Service.

TABLE A.

RETURN SHOWING THE MEDICAL STAFF AND THE PRINCIPAL MEMBERS OF THE SUBORDINATE STAFF.

Name and Qualifications.	Rank of Appointment.	Where stationed on 31st December, 1923.	Remarks.
J. H. Reford, B.A., M.D., B.CH., B.A.O., (Hnrs.), L.M. (Dub.), D.T.M. (Liverp), D.P.H. (Dist.) (Camb.)	Principal Medical Officer	Entebbe	
Major G. J. Keane, D.S.O., R.A.M.C., R. of O., M.D., M.B., CH.B., D.P.H., D.T.M. (Liverp).	Deputy P.M.O. (Native Services)	Entebbe	
G. R. H. Chell, M.R.C.S., L.R.C.P.	Deputy P.M.O.	Entebbe	
C. H. Marshall, M.R.C.S., L.R.C.P., M.B., B.S. (Lond).	Surgeon i/c European Hospital, Kampala	Kampala	
G. D. H. Carpenter, M.B.E., B.A., M.D., B.CH. (Oxf.), M.R.C.S., L.R.C.P., F.E.S., F.L.S., F.Z.S.	Senior Medical Officer, Sleeping Sickness Measures	Entebbe	
Capt. R. A. L. van Someren, M.D., CH.B., D.P.H. (Edin.), M.B.O.V.	Senior Medical Officer	Jinja	
J. E. Hailstone, M.A. (Camb.), M.R.C.S., L.R.C.P., D.T.M. (Lond.).	do	On leave	
Major R. J. A. Macmillan, D.S.O., T.D., M.B., CH.B. (Edin.), D.T.M. (Liverp.).	do	On leave	
W. L. Webb, M.R.C.S., L.R.C.P., M.B., B.S. (Lond.), D.P.H., R.C.P.S.	do	Mulago, Kampala	
W. L. Peacock, M.B., CH.B. (Glas.)	Medical Officer	Mulago, Kampala	
S. M. Vassallo, M.D. (Malta), D.T.M. & H. (Lond.). (Duncan Medical).	do	Mbale	
J. H. Neill, M.B., CH.B. (Edin.)	do	On leave	
S. R. Eccles-Davies, B.A. (Camb.), M.R.C.S., L.R.C.P. (Lond.).	do	On leave	
W. P. Kelly, L. & L.M.R.C.P.S., F.R.C.S., D.P.H. (Irel.).	do	Lira	
Capt. J. E. Brooks, R.A.M.C., M.B., CH.B. (Man.).	do	Masindi	Seconded from R.A.M.C.
J. C. Caldwell, M.B., C.M. (Edin.)	do	Masaka	
R. G. Griffin, L.M. & L.R.C.P. & L.R.C.S. (Irel.), D.P.H. (Dub.).	do	Soroti	
P. H. Rawson, M.C., M.R.C.S., L.R.C.P.	do	Arua	
E. A. C. Langton, M.R.C.S., L.R.C.P.	do	Mbarara	
S. W. T. Lee, M.B., B.CH., B.A.O.	do	Hoima	
A. T. L. Kingdon, M.R.C.S., L.R.C.P. (Lond.)	do	Kampala	
N. Bligh-Peacock, B.SC., M.B., CH.B. (Glas.)	do	Mulago, Kampala	
J. C. St. George Earl, B.A., M.B., B.CH.	do	Mulago, Kampala	
A. C. S. Smith, M.C., M.R.C.S., (Eng.), L.R.C.P. (Lond.), M.B., B.C. (Cantab).	do	Kabale	
J. M. Collyns, M.B., D.P.H. (Lond.), M.R.C.S., L.R.C.P.	Chief Sanitation Officer	On leave	
H. R. Neilson, M.B., CH.B., D.P.H. (Aberdeen).	Sanitation Officer	Kampala	
H. L. Duke, O.B.E., B.A., M.D., B.C., D.T.M. & H. (Camb.), SC.D. (Cantab).	Bacteriologist	Entebbe	
M. Martin (Miss), M.B., CH.B. (Edin.), D.P.H., D.T.M. & H. (Lond.).	Assistant Bacteriologist	On leave	
G. S. Bateman, L.D.S.R.C.S. (Eng.)	Dental Surgeon	Kampala	
J. Stewart	Laboratory Assistant	Entebbe	
E. C. Haddon	do	Entebbe	
E. S. Smout	Superintendent Venereal Diseases	On leave	
A. E. Baker	Laboratory Assistant Venereal Diseases	Mulago, Kampala	
C. Chorley, M.P.S.	Pharmacist	Entebbe	
Miss E. M. Pratt, A.R.R.C.	Matron	Kampala	
Miss D. M. Ivers	Nursing Sister	On leave	
Miss N. M. Adams	do	Entebbe	
Miss C. M. Beville	do	On leave	
Miss E. M. Stringer	do	Mulago, Kampala	
Miss M. J. Mackertich, R.R.C.	do	On leave	
Miss H. C. Potter	do	Entebbe	
Miss F. E. Warner	do	Kampala	
Miss A. Miles	do	Jinja	
Miss W. A. Shambrook	do	Kampala	
Miss G. M. Hawthorne	do	Kampala	
Mrs. M. S. Wilson	Temporary Nursing Sister	Mulago, Kampala	
Mr. H. Flint	Confidential Clerk	Entebbe	
Mr. H. T. Bott	Office Superintendent	Entebbe	
Mr. F. G. Caldwell	Clerk, P.M.O's Office	On leave	
Mr. P. J. L. Waters	Medical Storekeeper	Entebbe	
Mr. R. J. Wilkinson	European Supervisor, Native Plague Inspectors.	Busoga District	
Mr. C. O'Connor	Temporary Sleeping Sickness Inspector	Mbale District	

TABLE B.

RETURN SHOWING THE ASIATIC MEDICAL AND CLERICAL STAFF.

Name.	Rank	Where stationed on 31st December, 1923.	Remarks.
Achhru Ram, Rai Sahib	Assistant Surgeon ...	Kampala	
Karkhanis, A. D.	Senior Sub-Assistant Surgeon	Jinja	
Hukam Singh, I.O.M.	Sub-Assistant Surgeon	Soroti	Seconded from I.M.D.
Ram Chand	do ...	Kampala	
Mangal Sain	do ...	Masaka	
Andrews, C. P.	do ...	Masindi	
Ahmed Din	do ...	Mbale	
Raja, K. J.	do ...	Kabale	
Mahindra, S. R.	do ...	Bombo	
Sheth, P. K.	do ...	Gulu	
Rao, A. V. S.	do ...	Kampala	
Thadani, H. M.	do ...	Kampala	
Faquir Chand	do ...	Mubende	
Karam Dad	do ...	On leave	
Thacker, C. P.	do ...	Namasagali	
Menon, P. K. K.	do ...	Fort Portal	Seconded from I.M.D.
G. K. Pillai	do ...	Mbale	
Nur Mohomed	do ...	Lira	
Ghulam Haider	do ...	Entebbe	
Das, E. C.	do ...	Kitgum	
Balmukand Gopal	do ...	Arua	
Pradhan, K. A.	do ...	Mbale	
Pandit, V. B.	do ...	Moroto	
Mela Ram	Compounder ...	Jinja	
Fernandes, E. F. X.	do ...	Mbarara	
Chitale, V. V.	do ...	Butiaba	
Ahmed Din Ahmedi	do ...	Mulago, Kampala	
Pillai, S. R. S.	do ...	Entebbe	
Dharam Chand	do ...	Kakamari, N. Karamoja	
D'Souza, M. P. D.	Asiatic Asst. Storekeeper	On leave	
D'Souza, M. N.	Clerk ...	Entebbe	
Sohan Singh Sandhu	do ...	Entebbe	
Moniz, C.	do ...	Entebbe	
da Lima, U. B.	do ...	Entebbe	
Gunewardene, D. J.	do ...	Entebbe	
D'Souza, J. C.	do ...	Entebbe	
Martyris, S. X.	do ...	Jinja	
D'Mello, F. H.	do ...	Mulago, Kampala	
Sant Singh	do ...	Kampala	
Desai, M. I.	do ...	Kampala	

TABLE C.

SHOWING PRESENT STAFF AND HOSPITAL ACCOMMODATION FOR EACH DISTRICT, 1923.

(MEDICAL AND SANITARY BRANCHES COMBINED.)

BUGANDA KINGDOM.

Area in Square Miles 22,370. Total Population 789,124.

	Entebbe.		Masaka.		Mengo.		Mulago		Mubende	
European Staff ...	1 Medical Officer 2 Nursing Sisters		1 Medical Officer		1 S.M.O. 1 M.O. 1 S.O. 1 Matron 4 N. Sisters		1 S.M.O., 3 Medical Officers, 2 Nursing Sisters, 1 Superintendent.		1 Medical Officer	
Asiatic Staff ...	1 S.A.S. 1 Compounder		1 S. A. S.		1 A.S. 4 S.A.S. 2 Clerks		1 Compounder. 1 Clerk.		1 S.A.S.	
Native Staff :—										
Medical and Surgical	10		4		15		*186 and 16 Native Clerks		2	
Sanitation ...	6		5		30				1	
Number of Beds :—										
A. Med. & Surgical — European	6	31	—	11	15	113	—	200	—	10
Asiatic	3		—		—		—		—	
Native	22		11		98		200		10	
B. Isolation — European Asiatic Native		14	Nil		Nil		—		Nil	

Mengo includes the Stations Kampala and Bombo, and the Townships of Port Bell, Mbale and Namirembe.
*Mulago and Branch Dispensaries.

TABLE C (A).

EASTERN PROVINCE.

Area in square miles—36,292. Total Population—1,178,323.

	Busoga.	Bukedi.	Teso.	Lango.	Labor and Karamoja.
European Staff ...	1 S.M.O. 1 N. Sister. 1 Plague Inspector	1 Medical Officer 1 S.S. Inspector	1 Medical Officer	1 Medical Officer	—
Asiatic Staff ...	1 S.S.A.S. 1 S.A.S. 1 Compounder 1 Clerk	3 S.A.S's	1 S.A.S.	1 S.A.S.	1 S.A.S. 1 Compounder
Native Staff—					
Medical and Surgical	11	24	7	4	2
Sanitation ...	5	15	8	5	—
Number of Beds :—					
A. Med. & Surgical: European	4	—	—	Nil	Nil
Asiatic	3 } 33	7 } 126	4 } 26		
Native	26	119	22		
B. Isolation: European	—	Nil	Nil	Nil	Nil
Asiatic	6 } 12				
Native	6				

Busoga includes the Stations Jinja and Namasagali and the Townships of Iganga, Kamuli and Kaliro.

TABLE C (B).

WESTERN PROVINCE.

Area in square miles—13,766. Total Population—577,128.

	Ankole.	Toro.	Kigezi.
European Staff	1 Medical Officer	1 Medical Officer	1 Medical Officer (½ time)
Asiatic Staff	1 Compounder	1 S. A. S.	1 S. A. S.
Native Staff—			
Medical and Surgical ...	9	5	5
Sanitation ...	3	2	2
Number of Beds —			
A. Medical and Surgical: European ...	—	Nil	—
Asiatic ...	— } 30		— } 22
Native ...	30		22
B. Isolation: European ...	Nil	Nil	Nil
Asiatic ...			
Native ...			

Dr. Sharp, of the Church Missionary Society, Kigezi, attends urgent cases and may be called upon to give up to half his time in Government Service.

TABLE C (C).

NORTHERN PROVINCE.

Area in square miles—23,734. Total Population—437,737.

	Bunyoro.	Gulu.	Chua.	West Nile.
European Staff ...	1 M.O.	1 M. O.	1 M.O.	1 M.O.
Asiatic Staff ...	1 S.A.S. 1 Compounder	1 S.A.S.	1 S.A.S.	1 S.A.S.
Native Staff :—				
Medical and Surgical ...	20	6	3	4
Sanitation ...	2	5	—	4
Number of Beds :—				
A. Medical and Surgical: European	—	—	—	—
Asiatic	— } 17	— } 6	— } Nil	— } 6
Native	17	6	—	6
B. Isolation: European	Nil	Nil	Nil	Nil
Asiatic				
Native				

Bunyoro includes three Government Stations :—Masindi, Hoima and Butiaba.

TABLE D.

(B) Financial.

EXPENDITURE DURING THE YEAR.

	£	s.	cts.	£	s.	cts.
Medical Division.						
PERSONAL EMOLUMENTS :—						
Administrative Staff, Specialists, Medical Officers, Laboratory sub-staff and sub-staff for suppression of Sleeping Sickness, Venereal and Epidemic Diseases	39,149	9	89			
TOTAL PERSONAL EMOLUMENTS				39,149	9	89
OTHER CHARGES :—						
Medical Division—General	6,742	11	41			
Sleeping Sickness Division	365	14	73			
Venereal Disease Division	4,329	10	62			
Sanitation Division	3,701	0	22			
Laboratories Division	456	6	74			
TOTAL OTHER CHARGES				15,595	3	72
TOTAL MEDICAL DEPARTMENT				54,744	13	61
Hospitals and Dispensaries.						
PERSONAL EMOLUMENTS :—						
Nursing Staff, Pharmacist, Indian Medical Assistants, Asiatic Cooks, Native Attendants, and Miscellaneous allowances	13,900	17	50			
TOTAL PERSONAL EMOLUMENTS				13,900	17	50
OTHER CHARGES :—						
Medical, Surgical and Dental Stores	7,501	2	21			
Upkeep and Equipment of Hospitals and Dispensaries	4,070	12	24			
Miscellaneous Charges	1,415	2	77			
TOTAL OTHER CHARGES				12,986	17	22
TOTAL HOSPITALS AND DISPENSARIES				26,887	14	72
TOTAL MEDICAL DEPARTMENT				54,744	13	61
Special Expenditure (Stores for Anti-Venereal Disease Measures)....				5,617	18	75
GRAND TOTAL				£87,250	7	08

REVENUE.

The Revenue collected through the Medical Department during the year amounted to £3,454.

SECTION III.

Public Health.

(A) VITAL STATISTICS.

The births and deaths for the five Kingdoms—Buganda, Busoga, Bunyoro, Ankole and Toro, are shown in Tables E to K.

The total births (living) exceed the total deaths by 3,995, the birth rate being 24·86 per 1,000 and the death rate 22·15 per 1,000.

In the Buganda Kingdom the total deaths still exceed the total births, but only by 624 as compared with 1,458 last year.

There is a slight increase, however, in the number of still-births, there being 1,120 this year as against 1,102 in 1922.

For the five Kingdoms, however, the total number of still-births in 1923 has decreased by 248, there being 5,066 still-births in 1922 and 4,818 in 1923, a marked improvement being noted in Bunyoro and Toro.

	1923	1922
Still-Births % of Total Births and Still-births ...	11·61	12·79

There were 32,681 deaths as compared with 30,537 in 1922, an increase, unfortunately, of 2,144.

TABLE E.—TABLE OF DEATHS FOR THE FIVE DISTRICTS OF BUGANDA, BUSOGA, BUNYORO, ANKOLE AND TORO FOR THE YEAR 1923.

CAUSE OF DEATH.

County.	1 Influenza.	2 C. S. M.	3 Fever.	4 Sleeping Sickness.	5 Plague.	6 Small-pox.	7 Measles.	8 Syphilis.	9 Gonorrhœa.	10 Dysentery.	11 Diarrhœa.	12 Leprosy.	13 Cancer.	14 Tuberculosis.	15 Muhinyo or Bihimbo (Malta Fever.)	16 Dropsy.	17 Chest Complaints.	18 Fits.	19 Paralysis.	20 Abscess.	21 Wounds and Injuries	22 Snake-bite.	23 Child-birth.	24 Other Causes.	25 Total Deaths.	26 Total Births.	27 Still-Births.
Buganda ...	868	5	3,701	...	67	1	10	699	793	61	138	123	293	350	173	131	2,282	121	1,175	71	22	52	180	3,787	15,103	14,479	1,120
Busoga ...	...	...	237	29	810	...	6	744	222	152	602	72	72	6	218	139	916	62	960	115	21	12	225	2,078	7,698	9,892	545
Bunyoro ...	118	...	82	...	...	...	2	55	49	183	179	19	57	26	30	37	528	20	71	13	12	15	38	948	2,482	1,626	907
Ankole ...	355	10	1,998	3	...	...	12	667	10	93	96	14	157	496	149	22	52	27	115	14	6	16	90	803	5,205	6,816	748
Toro	212	...	118	36	4	8	19	175	53	81	43	18	43	181	150	122	182	15	8	13	11	21	66	614	2,193	3,863	1,498
TOTALS ...	1,553	15	6,136	68	881	9	49	2,340	1,127	570	1,058	246	622	1,059	720	451	3,960	245	2,329	226	72	116	599	8,230	32.681	36 676	4,818

TABLE F.—NATIVE POPULATIONS —BIRTHS, DEATHS AND RATES PER 1,000 FOR PROVINCES OR DISTRICTS FOR WHICH RETURNS MADE, AND PERCENTAGE OF STILL-BIRTHS TO TOTAL BIRTHS.

	BUGANDA		BUSOGA		BUNYORO		ANKOLE		TORO		TOTALS	
Population*	789,124		219,534		96,639		252,611		117,701		1,475,609	
	Births (living)	Deaths	Births (living)	Deaths	Births (living)	Deaths	Births (living)	Deaths	Births (living)	Deaths	Births (living)	Deaths
	14,479	15,103	9,892	7,698	1,626	2,482	6,816	5.205	3,863	2,193	36,676	32,681
Rates per 1,000	18·34	19·13	45·06	35·06	16·81	25·67	26·98	20·60	32·82	18·63	24·86	22·15
Still-births per cent of total Births and Still-births	1,120 = 7·18		545 = 5·22		907 = 35·80		748 = 9·88		1,498 = 27·94		4,818 = 11·61	

* Figures taken from Blue Book, 1922.

TABLE G.

SHOWING THE NUMBER OF BIRTHS, DEATHS AND STILL-BIRTHS IN THE SAME FIVE DISTRICTS FOR THE LAST SEVEN YEARS.

BIRTHS (LIVING.)

Year.	BUGANDA.	BUSOGA.	BUNYORO.	ANKOLE.	TORO.
1917	8,818	11,132	1,680	6,214	3,029
1918	10,287	10,782	1,649	6,615	3,729
1919	9,512	6,918	1,284	5,518	3,731
1920	12,265	9,005	1,597	6,529	3,167
1921	13,050	9,829	1,602	7,095	3,872
1922	12,481	8,792	1,539	7,382	4,322
1923	14,479	9,892	1,626	6,816	3,863
TOTALS ...	80,892	66,350	10,977	46,169	25,713

DEATHS.

Year.	BUGANDA.	BUSOGA.	BUNYORO.	ANKOLE.	TORO.
1917	13,203	8,892	3,126	5,357	1,446
1918	14,160	9,229	4,500	5,839	2,072
1919	15,221	10,053	3,345	7,388	3,907
1920	14,469	6,980	2,609	6,033	2,260
1921	13,761	11,312	2,599	6,206	1,976
1922	13,939	5,839	2,430	5,879	2,450
1923	15,103	7,698	2,482	5,205	2,193
TOTALS ...	99,856	60,003	21,091	41,907	16,304

STILL-BIRTHS.

Year.	BUGANDA.	BUSOGA.	BUNYORO.	ANKOLE.	TORO.
1917	971	726	806	763	1,211
1918	1,082	669	893	820	1,510
1919	1,009	319	638	750	1,767
1920	1,127	484	953	773	1,478
1921	1,169	487	993	780	1,504
1922	1,102	483	967	775	1,739
1923	1,120	545	907	748	1,498
TOTALS ...	7,580	3,713	6,157	5,409	10,707

TABLE H.

SHOWING INCREASE OR DECREASE OF BIRTHS OVER DEATHS DURING THE LAST SEVEN YEARS

Year.	BUGANDA.	BUSOGA.	BUNYORO.	ANKOLE.	TORO.	TOTAL INCREASE.	TOTAL DECREASE.
1917	—4,385	+2,240	—1,466	+ 857	+1,583	—	1,171
1918	—3,873	+1,553	—2,851	+ 776	+1,657	—	2,738
1919	—5,709	—3,135	—2,061	—1,870	— 176	—	12,951
1920	—2,204	+2,025	—1,012	+ 496	+ 907	212	—
1921	— 711	—1,483	— 997	+ 889	+1,896	—	406
1922	—1,458	+2,953	— 891	+1,503	+1,872	3,979	—
1923	— 624	+2,194	— 856	+1,611	+1,670	3,995	—
TOTALS:—							
Increase ...	—	6,347	—	4,262	9,409	—	—
Decrease ...	18,964	—	10,134	—	—	9,080	

TABLE I.

SHOWING THE NUMBER OF BIRTHS AND RATES PER 1,000 OF THE POPULATIONS IN THE SAME FIVE DISTRICTS FOR THE LAST SEVEN YEARS.

Year	Buganda		Busoga		Bunyoro		Ankole		Toro		Totals	
	Births (living)	Rates per 1000	Births (living)	Rates per 1000	Births (living)	Rates per 1000	Births (living)	Rates per 1000	Births (living)	Rates per 1000	Births (living)	Rates per 1000
1917	8,818	13·29	11,132	43·54	1,680	15·83	6,214	23·22	3,029	27·11	30,873	21·87
1918	10,287	12·79	10,782	42·17	1,649	14·50	6,615	24·74	3,729	28·77	33,062	21·05
1919	9,512	12·02	6.918	27·93	1,284	13·85	5,518	20·69	3,731	29·58	26,963	17·69
1920	12,265	15·50	9,005	36·36	1,597	17·23	6,529	24·48	3,167	25·11	32,563	21·36
1921	13,050	16·77	9,829	44·15	1,602	16·21	7,095	28·24	3,872	32·95	35,448	24·14
1922	12,481	16·03	8,792	39·49	1,539	15·57	7,382	29·38	4,322	36·78	34,516	23·51
1923	14,479	18·34	9,892	45·06	1,626	16·81	6,816	26·98	3,863	32·82	36,676	24·86

TABLE J.

SHOWING DEATHS AND RATES PER 1,000 OF THE POPULATIONS IN THE SAME FIVE DISTRICTS FOR THE LAST SEVEN YEARS.

Year	Buganda		Busoga		Bunyoro		Ankole		Toro		Total	
	Total Deaths	Rates per 1000	Total Deaths	Rates per 1000	Total Deaths	Rates per 1000	Total Deaths	Rates per 1000	Total Deaths	Rates per 1000	Total Deaths	Rates per 1000
1917	13,203	19·69	8,892	34·78	3,126	29·46	5,357	20·02	1,446	12·94	32,024	22·69
1918	14,160	17·61	9,229	36·10	4.500	39·57	5,839	21·84	2,072	15·98	35,800	22·80
1919	15,221	19·22	10,053	40·59	3,345	36·09	7,388	27·71	3,907	30·98	39,914	26·19
1920	14.469	18·28	6,980	28·18	2,609	28·15	6,033	22·62	2,260	17·92	32,351	21·22
1921	13,761	17·68	11,312	50·81	2,599	26·31	6,206	24·70	1,976	16·81	35,854	24·42
1922	13,939	17·91	5,839	26·23	2,430	24·60	5,879	23·40	2,450	20·85	30,537	20·80
1923	15,103	19·13	7,698	35·06	2,482	25·67	5,205	20·60	2,193	18·63	32.681	22·15

TABLE K.

SHOWING THE NUMBER OF STILL-BIRTHS AND STILL-BIRTHS PER CENT OF BIRTHS IN THE SAME FIVE DISTRICTS FOR THE LAST SEVEN YEARS.

Year.	Buganda		Busoga		Bunyoro		Ankole		Toro		Totals	
	No. of Still-Births	%	No. of Still-Births	%	No. of Still-Births	%	No. of Still-Births	%	No. of Still-Births	%	No. of Still-Births	%
1917	971	9·91	726	6·12	806	32·42	763	10·93	1,211	28·55	4,477	12·66
1918	1,082	9·52	669	5·84	893	35·12	820	11·02	1,510	28·81	4,974	13·07
1919	1,009	9·59	319	4·40	638	33·19	750	11·96	1,767	32·12	4,483	14·25
1920	1,127	8·23	484	5·10	953	37·37	773	10·58	1,478	31·81	4,815	12·88
1921	1,169	8·22	487	4·72	993	3·82	780	9·90	1,504	27·97	4,933	12·21
1922	1,102	8·11	483	5·20	967	38·58	775	9·50	1,739	28·69	5,066	12·79
1993	1,120	7·18	545	5·22	907	35·80	748	9·88	1,498	27·94	4,818	11·61

(B) General Remarks.

The total number of cases treated at Government General Hospitals, Dispensaries, Sub-dispensaries, Labour Camps and Mulago was 184,601 with 747 deaths, a very marked increase over the number treated in 1922.

Influenza was again epidemic and all districts were affected. Native returns show 1,553 deaths from this disease.

In the Government Hospitals and Dispensaries 8,413 cases were treated with 16 deaths. The cases treated in hospitals were of a milder type than formerly.

Plague, Smallpox and Cerebro-Spinal Meningitis.—The reduction reported last year in the number of cases of these diseases is well maintained. This is very satisfactory, and may be demonstrated best by giving the total deaths for the last three years for each of them.

	Plague.	Smallpox.	C.S.M.
1921	5,871 ...	89 ...	—
1922	1,305 ...	12 ...	471
1923	914 ...	10 ...	87

COMMUNICABLE DISEASES.

(1) Mosquito or Insect Borne.

Malaria.—11,394 cases were treated and 37 deaths are recorded.

In 1922 there were 8,883 cases with 31 deaths.

In all cases where it was at all possible microscopic examinations of the blood were made. The following classification was made :—

Tertian	1,939	cases with	4	deaths
Mixed infection—B. & S. T. ...	429	,,	1	death
Quartan	15	,,	—	deaths
Aestivo Autumnal	8,558	,,	25	,,
Chronic	453	,,	7	,,

This shows an increase of 2,511 cases over the cases treated in 1922, but it must be borne in mind that the medical service was extended considerably into out-districts during the year, and therefore the recording of more cases must be expected.

Blackwater Fever.—71 cases with 17 deaths are recorded as against 83 cases with 14 deaths in 1922. (*See* Special Report, Appendix No. I.)

Relapsing Fever.—283 cases with 7 deaths were treated, as against 302 with 3 deaths in 1922.

The cases were distributed as follows :—

Buganda.	Eastern Province.	Northern Province.	Western Province.
90	1	18	174

Again the greatest number of cases is reported from the Western Province.

The attention of all Medical Officers was drawn to the fact that this disease might be carried by the bed bug, but no such cases were reported by them during the year. The Medical Officers of the districts concerned report that the disease is tick-borne, and that in most of the cases a definite history of being bitten by ticks is obtained.

I have little hesitation in stating here that most native beds are associated with bed bugs, and that relapsing fever would be rife all over the country if the disease was borne by the bed bug in Uganda.

An interesting thing to note is that at Butiaba on Lake Albert the spirillum-conveying tick abounds, yet the inhabitants do not suffer from relapsing fever—no cases were recorded from there this year—and it is a well-known fact that natives passing through this station and who stop for one or two nights there contract the fever.

14 cases were treated at Arua in the West Nile, and these cases had all passed through Butiaba *en route* several days previously.

In the Western Province, however, its effects are severe, and it is recorded as being one of the chief causes of death amongst children.

Administrative officers and local chiefs are doing all they can to aid this department in the prevention of this disease.

Trypanosomiasis.—131 cases with 16 deaths are recorded, distributed as follows :—

Eastern Province.	Northern Province.	Buganda.
90	40	1

(*See* Special Report by S. M. O., S. S., Appendix No. IV).

Pyrexia of Uncertain Origin.—3,413 cases with 9 deaths. *Note.*—Sub-dispensaries also return 375 cases of Fever.

Undulant Fever.—2 cases were reported from Jinja.

(2) INFECTIOUS OR EPIDEMIC DISEASES.

Beri-Beri.—Four cases with no deaths as against 20 cases with 5 deaths in 1922.

Cerebro-Spinal Meningitis.—34 cases were treated in hospitals with 16 deaths, as against 18 cases with 15 deaths in 1922.

Returns from all sources show 207 cases with 87 deaths distributed as follows :—

Buganda.	Eastern Province.	Northern Province.	Western Province.
18 cases 13 deaths	42—42	15—1	132—31

Dysentery.—In hospitals 528 cases with 21 deaths were treated:—

Amœbic	166
Bacillary	290
Unclassified	72

In addition, Native Returns show 570 deaths from this cause.

Enteric Fever.—26 cases (3 Europeans, 5 Indians and 18 natives) with 2 deaths (natives) as compared with 10 cases with 2 deaths in 1922. (*See* Special Report, Appendix No. II).

Erysipelas.—Only 4 cases with 1 death are recorded.

Gonorrhœa.—2,240 cases with 12 deaths were treated. Native returns show 1,127 deaths (793 in Buganda), as compared with 1,290 deaths (920 in Buganda) last year.

Influenza.—8,413 cases with 16 deaths were treated, as compared with 1,204 cases with 12 deaths in 1922.

Buganda	1513
Eastern Province	5367
Western Province	1311
Northern Province	222
Total	8,413

Native Returns show 1,553 deaths, as against 1,578 deaths last year.

Leprosy—206 cases were treated with 3 deaths; of these 145 were nodular and 61 anæsthetic.

Treatment is being carried out at hospitals and dispensaries and at Barr Leper Camp by the exhibition of Moogrol.

No cures have been registered yet, but most of the cases have improved under treatment.

Leprosy is widespread in this Protectorate, but as our sub-dispensaries extend to the out-districts and our staff increases I hope to get more in touch with these people.

Measles.—189 cases with 1 death, as against 57 cases with no deaths in 1922

Plague.—98 cases with 81 deaths were treated in various hospitals. They were distributed as follows:—

	Cases.	*Deaths.*		*Cases.*	*Deaths.*
Bombo	19	11	Lira	5	4
Jinja	36	36	Mbale	20	20
Kampala	17	9	Mubende	1	1

Returns from all sources show 938 cases with 914 deaths.

Eastern	827 cases with 818 deaths.
Buganda	111 ,, ,, 96 ,,

A comparison of these numbers with those of former years is most satisfactory. The total deaths for the previous five years are:—

1918	2,493
1919	1,022
1920	1,732
1921	5,871
1922	1,305

See further report on Plague by the Chief Sanitation Officer.

Pneumonia.—319 cases with 81 deaths are recorded, as against 255 cases with 68 deaths in 1922.

Smallpox.—Twelve cases with no deaths were treated during the year, nine cases occurring at Masindi and one each at Masaka, Mbale and Mubende.

Returns from native sources show 85 cases with 10 deaths, as against 104 cases with 12 deaths in 1922. A very satisfactory reduction in the number of cases from previous years. Medical Officers in all districts vaccinated as many cases as possible, using locally prepared lymph from the laboratory, the total number vaccinated being 140,283, out of which there were 125,529 results recorded, 10,426 of these being failures.

Syphilis.—11,007 cases with 20 deaths were treated at all hospitals and dispensaries, including Mulago and its auxiliary centres. Native returns show 2,340 deaths as against 2,332 in the previous year. (*See* Special Report, Appendix No. III.)

Tuberculosis.—29 cases with 3 deaths.

Yaws.—3,376 cases with 6 deaths are recorded, as against 819 cases with 1 death in 1922. The increase in the number of cases treated is due to the fact that an intensive campaign against this disease was carried out in the Eastern Province, where 1,772 cases were treated with salvarsan substitutes with the following amazing results: 1,534 were cured, 8 died, and 230 remain for treatment.

In the West Nile District 655 cases were treated, and a total number of 2,394 intravenous injections were given. It was found that *Neokharsivan* gave the quickest and best result. Next year it is hoped that many more cases will come in for treatment, and that eventually this disease will be stamped out.

Goundou.—One case was reported in June by the Medical Officer at Mbarara, and a photograph was sent to this office for confirmation of his diagnosis, as this was the first case recorded in Uganda. The lesion demonstrated by the photograph was typical.

Helminthic Diseases:—

Years.	*Cestodes.*	*Nematodes..*	*Ascaris.*	*Dracunculus.*	*Ankylostomes.*
1922 ...	100	1,124 (4 deaths)	626	244	—
1923 ...	165	1,140 (5 deaths)	391	555	163 (5 deaths.)

See papers on *Schistosomiasis* and Guinea Worm by Dr. Rawson, West Nile District (Appendix No. VII).

(C) European Officials.

The number of cases of sickness from all causes, the number of deaths and the number of illnesses for which officials were placed off duty during the last three years are as follows:—

Years.	*Cases.*	*Deaths.*	*No. of illnesses for which placed off duty.*
1921 ...	745 ...	1 ...	701
1922 ...	884 ...	6 ...	850
1923 ...	791 ...	2 ...	766

Deaths: The cause of death in both cases was Blackwater Fever.

The principal causes of sickness were:—

Malaria: B. T.	136	333
S. T.	159	
Mixed	35	
Chronic	3	
Influenza		30
Dysentery: Bacillary	2	7
Amœbic	4	
Unclassified	1	
P. U. O.		24
Digestive		98
Relapsing Fever		3
Debility		17
Respiratory		32
Injuries		67
Enteric		2
Blackwater Fever		4
Nervous System		21 (2 Neurasthenia.)
D. A. H.		2

TABLE L.

TABLE SHOWING THE CAUSES OF INVALIDING AMONGST EUROPEAN OFFICIALS DURING THE PAST SIX YEARS.

DISEASES	1923	1922	1921	1920	1919	1918	Totals
Blackwater Fever	2	2	—	1	1	1	7
Circulatory Affections	—	—	—	—	—	1	1
General Debility	—	—	—	1	4	1	6
Nervous and Mental Diseases	—	1	—	—	1	1	3
Neurasthenia	—	4	—	5	—	2	11
Digestive Disorders	—	—	—	—	—	1	1
Carcinoma	—	—	—	—	—	2	2
Alcoholic Neuritis	—	—	1	—	—	—	1
Amœbic Dysentery	—	—	—	—	1	2	3
Adenitis	—	—	—	—	—	1	1
Anæmia and Chronic Bronchitis ...	—	—	—	—	1	—	1
Cardiac Debility	—	—	—	—	1	—	1
Eczema	—	—	—	—	1	—	1
Malaria	—	—	—	1	2	—	3
Rheumatism	—	—	—	1	—	—	1
Villous Papilloma of Bladder	—	—	—	1	—	—	1
Henoch's Purpura	—	1	—	—	—	—	1
Alcoholism	—	1	—	—	—	—	1
Chronic Parenchymatomo Nephritis ...	—	1	—	—	—	—	1
Nervous breakdown	—	1	—	—	—	—	1
Malaria, Heart and Defective Eyesight ...	—	1	—	—	—	—	1
Cerebral Congestion	—	1	—	—	—	—	1
Asthma and General Debility	—	1	—	—	—	—	1
Chronic Malaria and Anæmia	—	1	—	—	—	—	1
Excitability and Dilated Heart	—	1	—	—	—	—	1
Hernia	—	1	—	—	—	—	1
Duodenal Ulcer	1	—	—	—	—	—	1
Injuries	1	—	—	—	—	—	1
Colitis	1	—	—	—	—	—	1
Debility	1	—	—	—	—	—	1
Gunshot Wound	1	—	—	—	—	—	1
Tuberculosis	1	1	—	1	—	1	4
TOTALS ...	8	18	1	11	12	13	63

MEDICAL BOARDS.

Medical Boards were held on 11 officials, resulting in the following recommendations being made :—

(*a*)	To proceed to England and be passed fit before return	7
(*b*)	Transfer to healthier climate	1
(*c*)	Sick leave in Kenya	1
(*d*)	Be posted to healthier station	1
(*e*)	To undergo intensive treatment for Malaria	1

37 officials proceeding on leave were recommended for medical examination by the Medical Adviser to the Colonial Office.

EUROPEAN NON-OFFICIALS.

The total number of cases treated was 1,052 with 5 deaths as compared with 1,024 cases with 18 deaths in 1922.

In addition to these five deaths there were two suicides. Principal causes of sickness were :—

Influenza	31
Dysentery—	
Bacillary	2
Amœbic	8
Unclassified	1
Malaria—	
B. T.	226
S. T.	83
Mixed	42
Chronic	2

Blackwater Fever	5
P. U. O.	15
Digestive	169
Relapsing Fever	2
Debility	22
Nervous System	23
Injuries	86
Respiratory	66

Deaths:—Blackwater Fever 1, Cerebral Malaria 1, Heart Failure 1, Myelocythæmia 1, Meningitis 1.

(D) Asiatic Officials.

1,587 cases with two deaths were treated.

Cause of death:

Blackwater Fever	2

Principal causes of sickness:—

Malaria:—B.T.	177	809
S.T.	604	
Mixed	13	
Chronic	15	
Influenza		37
Dysentery:—Bacillary	5	9
Amœbic	4	
Blackwater Fever		17
Pyrexia of Uncertain Origin		31
Digestive		200
Debility		16
Respiratory		96
Nervous System		38
Pneumonia		3

MEDICAL BOARDS.

Eight Asiatic Officials were medically boarded:—

To be permanently invalided	3
Sick leave to India	3
Return to duty	2

TABLE M.

TABLE SHOWING, BY STATIONS, THE NUMBER OF CASES WITH DEATHS, TREATED AS IN-PATIENTS AT GOVERNMENT HOSPITALS DURING THE YEAR.

Stations.	1923.					1922.				
	Remaining 1922.	Yearly admissions.	Total Deaths.	Total cases treated	Remaining 1923.	Remaining 1921.	Yearly admissions.	Total Deaths.	Total cases treated.	Remaining 1922.
Arua	21	1,073	18	1,094	92	28	683	23	711	21
Bombo—Civil Military	28	349	17	377	40	27	437	7	464	28
Butiaba	3	35	4	38	1	...	152	2	152	3
Entebbe—Civil European	15	434	12	449	21	16	305	24	321	15
Fort Portal	1	17	...	18	...	...	1	...	1	1
Gulu	47	1,217	27	1,264	71	84	535	26	619	47
Hoima	2	164	11	166	43	4	64	4	68	2
Jinja—Civil ... European	32	517	78	549	39	26	330	33	356	32
Kabale	11	344	15	355	29	25	223	17	248	11
Kampala—European ...	2	171	...	173	6	10	572	65	582	10
Kitgum	8	118	5	126	5	2	117	6	119	8
Lira	45	618	17	663	89	27	525	41	552	45
Masaka	8	192	22	200	8	9	170	10	179	8
Masindi	11	148	13	159	10	22	307	17	329	11
Mbale	74	2,411	166	2.485	354	95	1,479	114	1,574	74
Mbarara	10	231	26	241	22	15	182	14	197	10
Mubende	13	217	11	230	10	9	140	11	149	13
Namasagali ...	2	54	4	56	3	...	38	3	38	2
Soroti	16	534	13	550	24	7	411	26	418	16
Totals ...	349	8,844	459	9,193	867	406	6,671	443	7.077	357

TABLE N.

RETURN OF DISEASES (IN AND OUT-PATIENTS) FOR THE YEAR 1923.

Diseases	Total Cases	Deaths
INFECTIVE DISEASES :—		
Beri-Beri	4	—
Cerebro-Spinal Fever	34	16
Chicken-Pox	212	—
Dengue	2	—
Dysentery—Amœbic	166	6
Bacillary	290	13
Unclassified	72	2
Enteric	9	2
Paratyphoid B	6	—
Erysipelas	4	1
Gonorrhœa	2,240	12
Influenza	8,413	16
Leprosy (*a*) Nodular	145	3
(*b*) Anæsthetic	61	—
Malaria (*a*) B. Tertian	1,939	4
(*b*) Benign and Sub-tertian	429	1
(*c*) Quartan	15	—
(*d*) Aestivo-autumnal	8,558	25
(*e*) Chronic Malaria	453	7
(*f*) Blackwater	67	16
Measles	189	1
Malta Fever	2	—
Plague	98	81
Pneumonia	319	81
Mumps	203	—
Anthrax	66	2
Relapsing Fever	283	7
Rheumatic Fever	15	1
Septicæmia	6	3
Trypanosomiasis (Sleeping Sickness)	131	16
Small-Pox	12	—
Syphilis (*a*) Primary	1,256	1
(*b*) Secondary	3,131	5
(*c*) Tertiary	4,542	12
(*d*) Inherited	1,890	2
(*e*) Unclassified	188	—
Tuberculosis	29	3
Whooping Cough	170	1
Yaws	3,376	6
P. U. O.	3,413	9
Fever	375	—
Others	16	—
INTOXICATIONS :—		
Alcoholism	5	—
Morphinism	1	—
Others	1	—
GENERAL DISEASES :—		
Anæmia	210	9
Anæmia—Pernicious	4	2
Diabetes	2	—
Exophthalmic Goitre	1	—
Gout	1	—
Hodgkin's Disease	1	—
Myxoedema	2	—
Purpura	1	—
Rickets	1	—
Scurvy	2	—
Debility	622	15
Others	83	2
Carried forward	43,766	383

TABLE N—*continued.*

Diseases	Total Cases	Deaths
Brought forward	43,766	383
LOCAL DISEASES:—		
Diseases of the Nervous System.		
Sub-Section 1.		
Neuritis	127	—
Meningitis	5	5
Congestion of Brain	1	1
Others	135	1
Sub-Section 2.		
Paralysis	26	4
Chorea	3	—
Epilepsy	38	4
Neuralgia	1,421	1
Hysteria	11	—
Others	305	1
Sub-Section 3.		
Mental Diseases—		
Mania	10	2
Melancholia	1	—
Dementia	5	2
Delusional Insanity	5	1
Others	10	—
Diseases of the Eye—		
Conjunctivitis	7,024	—
Keratitis	16	—
Ulceration of Cornea	143	—
Iritis	101	—
Optic Neuritis	16	—
Cataract	14	—
Others	344	—
Diseases of the Ear—		
Inflammation	1,814	—
Other Diseases	611	1
Dieases of the Nose—		
Rhinitis	505	—
Coryza	90	—
Others	151	—
Diseases of the Circulatory System—		
Pericarditis	5	1
Endocarditis	6	—
Valvular Mitral	46	12
Aortic	14	2
Arterial Sclerosis	2	1
Aneurism	3	—
Others	130	5
Diseases of the Respiratory System—		
Laryngitis	54	—
Bronchitis	23,245	17
Broncho-pneumonia	138	23
Emphysema	4	1
Pleurisy	78	2
Empyema	3	—
Phthisis	28	7
Asthma	85	—
Others	154	4
Diseases of the Digestive System—		
Stomatitis	962	3
Caries of teeth	1,425	—
Glossitis	10	—
Sore Throat	908	—
Inflammation of Tonsils	415	—
Gastritis	160	—
Ulceration of Stomach	15	—
Hæmatemesis	4	1
Carried forward	84,592	485

TABLE N—*continued.*

Diseases	Total Cases	Deaths
Brought forward ...	84,592	485
Local Diseases—*continued.*		
Diseases of the Digestive System—*continued.*		
Dilatation of Stomach	3	—
Dyspepsia	2,233	1
Enteritis	20	1
Appendicitis	16	—
Colitis	90	1
Ulceration of Intestines	6	—
Hernia	163	7
Diarrhœa	4,053	13
Constipation	7,268	3
Colic	2,360	1
Hæmorrhoids	52	—
Others	32	—
Pancreatitis	1	—
Hepatitis—Acute	30	—
Abscess	24	1
Cirrhosis	4	4
Jaundice	63	—
Peritonitis	4	1
Ascites	56	9
Others	130	6
Diseases of the Lymphatic System—		
Splenitis	96	—
Inflammation of Lymphatic Gland	390	—
Suppuration of Lymphatic Gland	135	—
Lymphangitis	20	—
Elephantiasis	44	1
Others	48	1
Diseases of the Urinary System—		
Acute Nephritis	25	1
Bright's Disease	22	7
Renal Colic	6	—
Cystitis	27	2
Suppression	5	—
Haematuria	7	1
Others	8	1
Diseases of the Generative System—		
Male Organs—		
Urethritis	49	—
Gleet	47	—
Stricture	52	2
Prostatitis	3	—
Soft chancre	405	—
Condyloma	75	—
Inflammation of Scrotum	11	—
Hydrocele	157	2
Orchitis	190	—
Epididymitis	14	—
Abscess of Testicle	3	—
Others	23	1
Female Organs—		
Ovarian Cyst	4	—
Endometritis	33	—
Displacement of Uterus	1	—
Vaginitis	7	—
Amenorrhœa	9	—
Dysmenorrhœa	35	—
Menorrhagia	58	—
Leucorrhœa	59	—
Abortion	70	2
Delayed Labour	19	5
Postpartem Hæmorrhage	4	1
Carried forward ...	103,361	560

TABLE N—*continued.*

Diseases	Total Cases	Deaths
Local Diseases—*continued.* *Brought forward* ...	103,361	560
Female Organs—*continued.*		
Retained Placenta	15	1
Premature Birth	12	3
Puerperal Septicaemia	11	7
Mastitis	52	—
Abscess of Breast	16	—
Parturition	65	—
Others	78	—
Diseases of Organs of Locomotion—		
Osteitis	34	3
Arthritis	171	3
Spondylitis	1	—
Bursitis	26	—
Myalgia	11,587	1
Lumbago	66	—
Synovitis	150	—
Others	86	1
Diseases of Connective Tissue—		
Cellulitis	1,283	5
Abscess	1,426	7
Elephantiasis	57	—
Others	102	1
Diseases of the Skin—		
Urticaria	84	—
Eczema	283	—
Boil	741	—
Carbuncle	43	1
Herpes	93	—
Psoriasis	37	—
Tropical Ulcer	314	1
Tinea	184	—
Scabies	15,995	1
Acne	16	—
Prickly Heat	62	—
Ulcers	12,958	21
Others	537	2
Injuries—General	73	14
Local	16,161	33
Tumours	130	5
Malformations	1	—
Poisons	26	6
Snakebite	37	—
Protozoa	—	—
Trematodo (Flukes)	1	—
Bilharzia	85	4
Others	3	—
Cestoda—		
Taenia Solium	93	—
Taenia Saginata	72	—
Nematoda—		—
Ascaris	391	—
Dracunculus	555	—
Filariasis	15	—
Ankylostomiasis	163	5
Oxyuris	5	—
Others	11	—
Insecta—		
Myiasis	2	—
Jiggers	269	—
Others	93	—
TOTAL ...	168,132	685
TOTAL SURGICAL OPERATIONS ...	1,913	—

In addition to the above the following cases were treated at Mulago and sub-centres, and Labour Camps :—

	Cases		Deaths
Mulago and sub-centres	11,382	...	62
Labour Camps	5,087	...	—
	16,469		62

TABLE O.

The following table shows, by stations, the total number of cases treated, with deaths, at Government Hospitals and Dispensaries during the years 1923, 1922 and 1921:—

Station	1923		1922		1921	
	Total Cases	Total Deaths	Total Cases	Total Deaths	Total Cases	Total Deaths
Arua	3,394	18	2,438	22	3,689	15
Bombo (Civil)	5,433	20	5,126	13	6,895	18
,, (Military)	2,303	2	1,958	1		
Butiaba	1,829	7	2,379	4	2,020	10
Entebbe (European)	40	1	59	5	198	—
,, (Civil)	6,852	18	5,743	27	5,823	81
Fort Portal	5,745	1	7,557	4	5,793	2
Gulu	5,869	27	4,385	31	4,204	20
Hoima	3,939	38	2,388	17	2,619	9
Jinja (European)	37	3	22	—	224	4
,, (Civil)	7,813	118	6,545	49	5,400	127
Kabale	3,753	16	5,260	23	1,075	3
Kakamari (Military outpost)	1,788	3	—	—	—	—
Kampala (European)	168	1	156	1	—	—
,, (Civil)	18,939	60	14,613	86	15,061	145
,, (Police)	1,415	4	1,497	1	3,671	7
,, (Gaol)	3,688	13	3,467	10		
Kitgum	3,711	6	6,085	11	4,002	3
Lira	4,182	19	3,767	57	3,118	86
Masaka	5,401	24	4,616	16	5,046	28
Masindi	3,554	14	3,889	19	4,701	33
Mbale	9,368	186	3,895	134	4,489	81
Mbarara	6,031	28	4,237	14	4,327	19
Moroto	765	1	(not included)		—	—
Mubende	3,989	13	4,077	13	4,024	7
Namasagali	2,062	5	1,288	4	1,884	3
Soroti	7,454	12	1,861	26	2,203	25
County Dispensaries	48,610	27	(not included)		—	—
Mulago and sub-centres	11,382	62	—	—	—	–
TOTAL	179,514	747	97,308	588	90,466	726

In addition to the above 5,087 cases were treated at Labour Camps.

SECTION IV.

Hospitals and Dispensaries.

Accommodation.—Kampala European Hospital—the north and south wings were completed.

A new laboratory is being built and should be ready for occupation in 1924.

A small Asiatic hospital (4 beds) at Jinja was presented by Mr. Nanji Khalidas Mehta and taken over by the Government.

The old native hospital at Kampala was reconstructed and converted into an Asiatic hospital, and this will be opened early in 1924.

At Bombo a new hospital is being erected.

Branch Dispensaries.—27 of these were completed and staffed with trained native attendants. They are located as follows:—

Buganda	10
Eastern Province	8
Northern Province	1
Western Province	8

The usefulness and benefits of these sub-dispensaries are very much appreciated by the native population, and through them treatment is brought to natives to whom it was inaccessible before.

Maternity and Child Welfare Centres.—Ten of these centres, under the Church Missionary Society and aided by grants from this Government, were in full swing during the greater part of the year, and they have done and are doing an inestimable amount of good. The total number of out-patient attendances was 17,276 and 828 living children were discharged.

Maternity Training School.—At the Lady Coryndon Maternity Training School there were 15 students during the year. Six passed the Central Midwives Board examination and one obtained the diploma.

The following numbers speak for themselves :—

	1923.	1922.	1921.
Total in-patients	1,881	637	350
Living children sent out well and strong...	485	380	134
Total out-patients	18,615	16,702	14,800
Attendances in Child Welfare Department	2,037	2,150	1,600

At the Nsambya Maternity Training School 12 students were in training during the year.

Lunatic Asylum.—During the year improvements were made in the gaol at Hoima—all prisoners were transferred elsewhere, leaving the whole building available for lunatics. It is not ideal but must serve till an asylum can be built and staffed.

Health in Prisons.

H. M. Prison, Kampala.

Daily average number of prisoners	549
Daily average on sick list	37

The prison experienced a sharp epidemic of influenza (8 deaths), slight outbreaks of dysentery (no deaths), chicken-pox (no deaths), plague (4 deaths), cerebro-spinal meningitis (5 deaths), and enteric group (2 deaths).

The most prevalent diseases were malaria and bronchitis.

The percentage of physically sound persons amongst the prisoners is very small, and in view of the large numbers who pass through this institution during the year the health may be classed as good.

Development Loan.

BUILDINGS.

EXPENDITURE 1923.

	£	s.	cts.
Venereal Disease purposes	5,940	1	36
Entebbe.—			
Isolation Hospital—Natives	320	10	67
Addition to Medical Store	832	12	79
Additions to Laboratory	2	13	00
Kampala.—			
Completion of European Hospital	3,894	13	85
New Native Hospital	2,988	13	63
Swamp	744	1	79
Disinfectors	190	5	26
Bombo.—			
Hospital Buildings – Native	2,281	18	83
Jinja.—			
Native Hospital Buildings	394	17	62
Lira.—			
Dispensary	578	12	03
Native Hospital Buildings	816	10	25
Masindi.—			
Native Hospital Buildings	80	1	43
	£19,065	12	51
Entebbe.—			
Combined Medical and Veterinary Laboratory ...	2,231	11	47
Kampala.—			
Education—Native Hospital for training Medical Students :—			
3rd class House, Makerere	1,227	00	00
Double ward at Mulago	705	00	00

MISCELLANEOUS EXPENDITURE 1923.

	£	s.	cts.
Equipment for Hospitals	1,890	11	42
Laboratory—Cold Storage Equipment	146	15	34

Buildings.

STATEMENT OF MINOR WORKS CARRIED OUT DURING 1923.

	£
Entebbe.—	
Office for P. M. O.	173
European, Asiatic and Native Hospitals, and P. M. O.'s Office—repairs	64
Kampala.—	
Paid to Trustees for repairs to Lady Coryndon Maternity School	650
European, Native and Mulago Hospitals—repairs	21
V. D. treatment centres—repairs	43
Jinja.—	
European and Native Hospitals—repairs	15
Mbale.—	
Native Hospital—repairs	28
Soroti.—	
Native Hospital—repairs	13
Tororo.—	
Temporary house for D. M. O.	200
Mbarara.—	
Native Hospital and Dispensary—repairs	44
Kabale.—	
Native Hospital and Dispensary—repairs	1
Masindi.—	
Tank at Medical Officer's quarters	8
TOTAL	£1,260

R. J. A. MACMILLAN, MAJOR,
Acting Deputy Principal Medical Officer.

SECTION V.

~~ADMINISTRATIVE.~~ Sanitation

Owing to illness, Dr. J. M. Collyns, Chief Sanitation Officer, proceeded on short leave to England on 26th February, 1923, on the recommendation of a Medical Board, and was absent from the Protectorate for the remainder of the year, his leave having been extended on account of his health.

Dr. H. R. Neilson, whose promotion to the post of Sanitation Officer appeared in the *Official Gazette* of 15th August, acted as Chief Sanitation Officer during his absence, and as Dr. Collyns did not return to the Protectorate until the end of January, 1924, the former has done most of the work involved in the preparation of this Report.

Dr. Neilson had to perform the ordinary routine duties of Medical Officer of Health, Kampala, in addition to acting as Chief Sanitation Officer, and as the work entailed in the efficient performance of the former is more than sufficient to occupy the whole time services of one man, the work involved by his assumption of the latter post naturally suffered, and many important duties pertaining to that post had perforce to be neglected.

For example, Dr. Neilson was only able to undertake two short tours of inspection throughout the year, one to the Western Province, when the townships of Mbarara and Masaka were visited, and one to the Northern Province, when a special inspection of Butiaba township was made in company with the District Medical Officer, Bunyoro.

It has been decided that as from January 1st, 1924, all Sanitary Inspectors shall be included under the Sanitation Division of the Medical Department. In the past only native inspectors appeared under Medical, whilst European and Asiatic Inspectors appeared under Municipal.

LEGISLATION, Etc.

An Amendment Ordinance to the Uganda Infectious Diseases Ordinance, was enacted and came into force on 30th April. This merely makes minor alterations in some of the sections of the principal Ordinance.

Owing to an outbreak of plague near the military cantonment of Bombo in November, which gradually spread into the surrounding districts, the county of Bulemezi was declared an infected area in December and still remains so.

The Township Rules, 1916, have been under revision during the year, and it is hoped that the new rules will be published in 1924.

FACTORIES BOARD.

All work connected with this Board was during the year taken over by the Director of Public Works, a junior European Clerk being transferred from the Medical to the Public Works Department to assist him in the clerical work of the Board.

In consequence of this arrangement the Chief Sanitation Officer ceases to be Executive Officer, although remaining a member, of the Board, and the Deputy Director of Public Works becomes Executive Officer. The personnel of the Board has been increased by two members, *viz.*, the Deputy Director of Public Works and an Asiatic member representing Asiatic ginning interests.

Mr. Bott, the late Secretary to the Board, has performed his duties most expeditiously and to the satisfaction of all parties concerned, and it was unanimously decided by the Board that a letter should be written to him by the chairman expressing their appreciation of the work performed by him during his term of office as secretary to the Board.

CENTRAL TOWN PLANNING BOARD.

Only two meetings have been held during the year. The policy to be followed in respect of segregation in townships between Europeans and Asiatics was laid down by the Secretary of State in his Memorandum on "Indians in Kenya" which was presented to Parliament in July.

KAMPALA SWAMP AREAS.

A scheme is now being drawn up for the "drainage and control of these areas," which it is hoped will be approved so that the very necessary work of increasing the system of subsoil drains, which has in the past proved most satisfactory, can be proceeded with as soon as possible. In the past the work on these areas has suffered from divided control and lack of supervision, and during the year Dr. Neilson has only found it possible to maintain existing drains and clearings.

SPIRILLUM FEVER.

This disease still remains, in my opinion, the chief cause of death amongst children and of disability amongst adults in the Ankole district of the Western Province and in the adjoining areas of the Masaka and Toro districts, and needs much more detailed investigation.

EPIDEMIC DISEASES.

Plague.

During the year plague has been confined to the Buganda and Eastern Province, the Northern and Western remaining free.

Buganda.—With the exception of one case in Entebbe district in February, two in the Mubende district in May, all other cases occurred in the Mengo district.

Eastern Province.—Cases occurred in the Busoga, Bukedi and Lango districts, Teso alone not reporting any cases.

The following tables give particulars of all cases reported:—

BUGANDA PROVINCE.

	Townships.		Districts.	
	Cases.	Deaths.	Cases.	Deaths.
ENTEBBE DISTRICT	—	—	1	1
MENGO DISTRICT:—				
Kampala	12	8	—	—
Port Bell	3	3	—	—
Bulemezi County (including Bombo area) ...	—	—	24	15
Other localities	—	—	69	67
MUBENDE DISTRICT	1	1	1	1

Totals:—Cases 111; Deaths 96.

EASTERN PROVINCE.

	Townships.		Districts.	
	Cases.	Deaths.	Cases.	Deaths.
BUSOGA DISTRICT:—				
Jinja	36	36	—	—
Iganga	33	33	—	...
Kamuli	25	25	—	..
Namasagali	1	1	—	...
Other localities	—	—	533	532
BUKEDI AREA:—				
1. Bugwere District—				
Mbale	18	17	41	39
2. Budama District—				
Tororo	17	16	—	—
Mjanji Port	5	3	—	—
Other localities (Bukedi)	—	—	80	80
Lango District—				
Lira	3	3	—	—
Other localities	—	—	35	33

Totals:—Cases 827; Deaths 818.

Kampala and Jinja, our two chief commercial ports, were practically never free from plague, either actually in the townships themselves, or, especially as regards Kampala, just outside in the environs.

A short sharp epidemic occurred in Bulemezi County, Buganda Province, during November and December, 10 Asiatics being attacked. (*See* Mengo Report.)

During June the disease broke out rather severely in the Bugweri district of the Eastern Province, 37 cases with 35 deaths being reported.

July, August and September saw a sharp epidemic in Kamuli Township, 24 cases with 24 deaths. This place is a small but important trading centre, the ramshackle shops situated in it being leased by Asiatics on temporary occupation licences. It is one of the most insanitary and badly situated collection of temporary buildings in the Protectorate. Strict measures were taken by Dr. van Someren, Senior Medical Officer, Jinja, and Mr. Wilkinson, who has done extraordinarily good work in the Busoga district; and with the willing co-operation of the Administrative Officers of the district, conditions were improved. A site has now been chosen for a new township, in which it is intended that all shops should be of a standard type, and in which no temporary occupation licences will be issued. It is hoped that plots on the new site will be taken up quickly and that the old township will be vacated as soon as possible. With this object in view it was proposed that no more temporary occupation licences should be granted in the old township, except to traders who have applied for plots on the new site.

A general increase in the incidence of plague in the Eastern Province occurred during May, the highest point of the wave being reached in July, when 169 cases were reported, gradually falling to 78 in November and 36 in December. It will be seen from the tables that 628 out of a total of 827 for the Eastern Province occurred in the Busoga District.

The following table gives the figures for the three years 1921, 1922 and 1923 :—

	Buganda Province		Eastern Province	
	Cases	Deaths	Cases	Deaths
1921	585	536	5,693	5,335
1922	178	153	1,184	1,152
1923	111	96	827	818

PREVENTIVE MEASURES EMPLOYED.

(1) Routine sanitary measures taken in townships as regards clearing, disposal of refuse, and attention to conditions liable to attract rats—in particular the black rat—and to the safe storage of rat-attracting material.

(2) Rat destruction generally and particularly in infected and threatened areas by means of traps, drives and poison.

The following figures were returned for the year :—

Buganda Kingdom	....	81,837	(Mengo District 21,249)
Eastern Province	....	11,667,695	(Bukedi area 2,658,310)
Northern Province	....	7,759	
Western Province	....	84	
TOTAL	...	11,757,375	

(3) Isolation of sick and segregation of contacts, in addition to burning of huts (when old and in bad repair) or dethatching (when of a better type), combined with an intensified rat destruction campaign in the immediate neighbourhood and burning or disinfection of personal belongings.

(4) *Prophylactic Inoculations.*—The numbers inoculated, so far as figures are available, were 27,055, distributed as follows :—

Buganda Kingdom	...	6,173	Mengo District	5,813
Eastern Province	...	20,882	Busoga District	11,040
			Bukedi Area	5,677
			Lango District	4,165

For the greater part of the year, a vaccine prepared at the Entebbe Laboratory was used, inoculation with which, owing to its small dose (1 c.c.—1·5 c.c.) and to the minimum discomfort caused by it afterwards, has been more cheerfully borne than the much larger dose with greater re-action of the Bombay vaccine.

It is too early yet to say anything definite as regards its protective powers or of the probable period which elapses before immunity is acquired, but in the Mengo District of the Buganda Kingdom no cases of plague have occurred in people inoculated with this vaccine, whilst six deaths occurred in people inoculated with Bombay vaccine (over a year old)—five within 10 days of inoculation, and one in whom inoculation had been performed over 10 days previously.

According to literature on the subject, Haffkine's Vaccine affords immunity after 24 hours (one authority), or after the seventh to eighth day (another authority), so that a wide margin of possible non-protection or imperfect protection is left

SMALL-POX.

	1921	1922	1923
Cases	506	104	97
Deaths	89	12	10

These 97 cases were distributed as follows:—

	Townships.		Districts.		Totals.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
BUGANDA KINGDOM ...						
Masaka	1	—	4	—	13	1
Mengo	—	—	3	—		
Mubende	—	—	5	1		
WESTERN PROVINCE:—						
1 case occurred in Toro District.	—	—	—	—	1	—
EASTERN PROVINCE:—						
Busoga District:—						
Kamuli ...	1	1	—	—	15	4
Other localities ...	—	—	1	—		
Bukedi Area:—						
Bugweri District ...	—	—	8	3		
Teso District	—	—	5	—		
NORTERN PROVINCE:—						
68 cases with 5 deaths as under:—						
Bunyoro District:—						
Masindi	5	—	—	—	68	5
Other localities ...	—	—	4	—		
West Nile District ...	—	—	59	5		
				Grand Total	97	10

It will be seen that out of the total number of 97 cases with 10 deaths reported from the whole Protectorate, no fewer than 59 cases with 5 deaths occurred in the West Nile District. These cases occurred at Aringa about 40 miles north-east of Arua station during February and March. The District Medical Officer visited the affected area and vaccination was vigorously carried out, with the result that no more cases occurred after March, the majority of the cases (46 cases with 3 deaths) taking place in February.

VACCINATIONS.

During the year 140,283 were performed, the results of which are recorded in respect of 125,529. Of these 125,529, 10,426 were failures, leaving a total of 115,103 successful and modified. This gives a percentage of nearly 91·7 successes amongst the cases the results of which are recorded, a very satisfactory figure.

I considered this year's and last year's figures for small-pox cases and vaccination results satisfactory and that they afford an excellent proof of the protective power of the lymph supplied by the Bacteriological Laboratory, and of the efficacy of the system of vaccination now being carried out, as a result of which the protected population is being slowly but surely augmented.

These vaccinations were distributed as below amongst the different districts and provinces:—

		Totals
Buganda Kingdom		
Mengo District	13,446	
Masaka "	9,704	
Mubende "	1,292	
Entebbe "	2,344	26,786
Northern Province		
West Nile District	11,520	
Bunyoro "	3,475	14,995
Western Province		
Toro District	354	
Ankole "	1,884	
Kigezi "	15	2,253
Eastern Province		
Busoga District	712	
Bukedi Area	16,476	
Teso District	18,897	
Lango "	60,164	96,249
	Grand Total ...	140,283

CEREBRO-SPINAL MENINGITIS.

A total of 207 cases with 87 deaths, distributed as under, were returned:—

	Townships.		Districts.		Totals.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
BUGANDA KINGDOM.						
MENGO DISTRICT:—						
Kampala	6	6	—	—	18	13
Other localities	—	—	10	6		
MASAKA DISTRICT	—	—	2	1		
WESTERN PROVINCE.						
TORO DISTRICT	—	—	82	13	132	31
ANKOLE DISTRICT	—	—	4	3		
KIGEZI DISTRICT	—	—	46	15		
NORTHERN PROVINCE.						
WEST NILE DISTRICT:—						
Arua	1	1	—	—	15	1
GULU DISTRICT:—						
Gulu	6	0	—	—		
Other localities	—	—	8	0		
EASTERN PROVINCE.						
BUSOGA DISTRICT:—						
Jinja	3	3	—	—	42	42
BUKEDI AREA:—						
Mbale	2	2	—	—		
Other localities	—	—	1	1		
TESO DISTRICT:—						
Soroti	1	1	—	—		
Other localities	—	—	35	35		
Grand Total ..	—	—	—	—	207	87

These figures are a very great improvement on those of 1922, when 677 cases with 471 deaths were reported. It will be noticed, as was remarked upon last year, that the case mortality from the Western Province is very low as compared with that from the Buganda and Eastern Provinces, where the returns are much more likely to be correct owing to better supervision and more accurate diagnosis. In the two latter provinces native inspectors are constantly touring the districts and investigating reports from the local chiefs of outbreaks of, and deaths from, infectious diseases, but this system has not yet been introduced into the Western and Northern Provinces, which are not nearly so far advanced as regards native administration.

The case mortality for the Buganda and Eastern Provinces = 92% whilst that for the Western and Northern Provinces = 22%, an extraordinarily low figure, pointing to the practical certainty of a wrong diagnosis in many of the cases, nearly all of which are reported and seen only by the local natives of the districts in which they occur. Until these provinces are adequately staffed with Medical Officers and native inspectors who have been trained to recognise the different diseases, both infectious and others, which are the chief causes of death and disablement in these provinces, very little progress can be made towards the prevention or cure of these diseases, or even towards a correct diagnosis of them. Cerebro-spinal meningitis is probably endemic in these provinces; in the Ankole and Kigezi districts it is certainly so. In addition there has been a good deal of influenza of recent years (this was, I think, undoubtedly the main factor in the large number of cases returned as cerebro-spinal meningitis in 1922); Malta fever is known to be present in the Toro district; a disease has been reported in the same district for some years past, which by some is thought to be beri-beri: and more recently evidence has pointed to the possibility of typhoid fever being endemic in these provinces. Of more importance probably than any one or all of these diseases combined from the economic as well as from the medical point of view is relapsing fever, which, in my opinion, is the chief cause of death amongst the infants and young children in the district of Ankole and parts of the Masaka and Toro districts, and of disability in the adult population of these areas.

ENTERIC FEVER.

26 cases with two deaths were reported from the whole Protectorate. Of these cases, three were Europeans, five Indians and 18 natives. Some particulars of the 16 natives cases which were treated in different hospitals at Kampala are included in the report from Mengo district, *pp.* 40—45.

The Bacteriologist is now conducting an investigation of the agglutinating properties of the blood of natives (in particular of the prisoners confined in the Central Jail, Kampala) against the different typhoid *bacilli* with a view to determining the prevalence of the disease amongst natives of the Protectorate, and, if possible, its endemicity amongst any particular tribe or in any definite district.

Other infectious diseases call for no special comment, with the exception of an outbreak of measles reported by the District Medical Officer, Kitgum, the evidence in respect of which is by no means reliable.

The chief of the area Padibe from which the cases were reported stated that 100 deaths had occurred during the quarter July to September, but when the district was visited by the District Medical Officer and the Sub-Assistant Surgeon, the latter of whom remained there for some time, only convalescent cases were seen. A native attendant sent out on three occasions with medicines, saw many sick people whom he treated, and all those treated are stated to have recovered. The cases were scattered over a large area, and only children are reported to have died of the disease, which the District Medical Officer definitely diagnosed as measles.

PREVENTIVE MEASURES.

These have been dealt with in detail (Mengo District Report)—*pp.* 40—45.

GENERAL SANITATION.

Water-supply.—A water-engineer to go into the question of a pipe-borne water-supply for Kampala and possibly also for Jinja and Entebbe has been sanctioned for 1924, and is now in the country.

Drainage.—A certain number of surface masonry drains have been laid down during the year in the townships of Kampala, Entebbe and Jinja, particulars of which are given in Table P. Definite schemes for the complete surface drainage of these townships are being drawn up.

ISOLATION HOSPITALS.

The building of the Isolation Hospital at Kampala has again been postponed owing to difficulty in choosing a suitable site which would meet all requirements. Up to the present the temporary isolation and quarantine camps at Kampala have been controlled and run by the Medical Officer of Health, Kampala, but owing to insufficient staff it will be impossible to continue to do this in the future, and it has now been decided that if a suitable site can be found near Mulago, this hospital shall be built there and be controlled and staffed from Mulago.

RECOMMENDATIONS FOR FUTURE WORK.

(1) The building of a native Isolation Hospital at Kampala without further delay.

(2) That the drainage of the swamp areas in Kampala township be pushed forward with more vigour than in the past under a scheme providing for unified control and regular European supervision, in the shape of an overseer specially detailed for the work.

(3) That provision be made for the appointment of four additional Medical Officers of Health in the Sanitation Division, one for each province, as was recommended in 1920 and asked for in His Excellency's despatch to the Secretary of State dated 29th September, 1920, covering the Draft Estimates for 1921.

J. M. COLLYNS,
Chief Sanitation Officer.

MENGO DISTRICT.

Plague.

Figures for 1923 and previous two years as entered at Kampala for the Mengo District :—

1923		1922		1921	
Cases	Deaths	Cases	Deaths	Cases	Deaths
107	92	136	123	440	421

I consider that there has been a distinct improvement in 1923, especially in Kyagwe County, in which the administrative centres of Buikwe and Lugala last year had respectively 20 and 13 cases; this year they had three and nil. Sporadic cases still crop up in Nakifuma, but at no time has anything like an epidemic threatened.

As regards Kyadondo, Kampala township and Mengo suffered most severely as in 1922, where they accounted for 22 and 12; this year the figures being 12 and 37.

The large total for Mengo, 37, is accounted for mainly by Nsambya and its surroundings (Katwe and Kibuli) from which 32 cases came; the epidemic reached its maximum at the end of August, during which month 13 cases occurred. Two cases recovered under treatment.

As regards Kampala township we had no serious outbreak. Cases occurred at Kololo, three; business and residential quarters, five; Old Kampala, two; Jail, one; Government Plantation, one. Four of these recovered under treatment. Two cases occurred at Mpanga Jail in August.

One Europeon working in Uganda Company's Store unfortunately developed plague and died at Namirembe Hospital. He had been ill for about three days before he called Dr Cook in; he was ordered to Namirembe, and on examination a large fluctuating femoral bubo was discovered, and this was incised as plague was not suspected; B. P. however, were found. He had everything done for him that was possible, but died of secondary septicæmia on the seventh day after admission, during the last four days of which he had very few lucid intervals.

As soon as plague was diagnosed, I visited the Uganda Co. Stores, and elicited the fact that dead rats had been found about a week previously while demolishing the old store, and also that the night watchman who lived at Kawempe had not put in an appearance for four days. On enquiry I found he had died two days previously and that his body had been taken into Bulemezi for burial. Although I wired Medical, Bombo, immediately, neither his burial place nor the relations who removed him could be found; they have not returned to Kawempe. I may say that Mr. Cameron, Manager, Uganda Co., had never been informed about dead rats being found on these premises.

Two Indians only contracted plague in the Township, one recovering.

Bulemezi.—A very sharp outbreak started in November in Kisingiri's bazaar, Bombo, the first seven cases being all Indians. Immediate closure and disinfection of shops was carried out, every one was inoculated, and isolation and segregation enforced. Unfortunately, after the first few cases the Indians got really frightened and many of them fled; consequently in December cases occurred north and north-east of Bombo; my native inspectors went to those places and carried out inoculations. I asked for the district to be declared an infected area, which was done.

Many cases which were seen early recovered under treatment, including five out of 10 Indians attacked and four out of 14 natives. Six deaths occurred in people inoculated; in five of these inoculation had been performed within 10 days of the attack, and in one inoculation had been performed over 10 days previously.

The epidemic is now dying out up to the time of writing this (28th January, 1924).

Buvuma.—One case reported in October, but afterwards reported as very unlikely to be plague.

Throughout the year Mr. Achhru Ram was in charge of all medical treatment and diagnoses at Nakasero Quarantine Camp, where the average daily number of cases of infectious diseases and contacts during the year was 10·33, the greatest number in the Camp at one time being 48 in August. Twenty-five bodies (15 from Nsambya Hospital and surrounding neighbourhood, and two from old Kampala) were on examination found to have died from plague. Six cases recovered under treatment. Dr. C. H. Marshall and Mr. Achhru Ram are submitting a separate report as to results, and it appears fairly evident that in the treatment of plague *Neokharsivan* (*B.W.*) is of more therapeutic value than N.A.B. (PD).

Mr. Mahindra's report from Bombo *re* treatment and its effect is as follows :—

Treatment	No.	Cured	Died
Neokharsivan alone	9	4	5
N. A. B. alone	3	2	1
Mixed N. K. and N. A. B.	1	1	—
T. Iodine intravenously *bis die*	4	1	3
Other treatment	2	—	2

Inoculations.—5,813 were done during the year, compared with 14,187 in 1922. The reason of the decrease in the number done is due to there being no serious epidemic to contend against as was the case in 1922, when my inoculators did over 3,500 in Entebbe district (Busiro and Mawakota), over 1,000 in Kyagwe (outbreak at Lugala), and 8,124 in Kampala township (Kampala outbreak). The inoculations this year were done at the following places :—

Kampala, Rubaga, Luzira, Kampala Jail, Mulago, Nsambya, and surroundings, the Government Shamba, and Kawempe. Bombo was the only outside place where inoculations were performed.

RAT CAMPAIGN.

Year.	*Kampala Township.*	*Outside (in districts.)*
1921 ...	10,320	22,627
1922 ...	8,127	15,065
1923 ...	8,223	13,026

	1921.	*1922.*	*1923.*
Killed in drives	30,985	17,423	9,766
Poisoned	916	4,161	10,798
Trapped	987	1,547	661
Found dead	59	81	24
Number examined	1,352	1,130	2,659
Number Plague infected	2	59	14

As will be seen there is a great falling off in the number killed in drives. During 1921 and 1922 a great many were reported killed in Nakifuma district (over 7,000 in 1922); this year, however, very few have been killed in this part (just over 1,000). Poison has accounted for a great many, and there is a great demand for it among the natives, who prefer it to traps. During the year I have used about 150 lbs. Barium Carbonate, or sufficient to make about 380,000 baits.

Infected rats were found dead as follows :—

Twelve at Nsambya in August, one at K. G. Agency, Market Street, in February, and one at Namirembe in Rev. Grace's house in December. Reports of rats having been found dead were frequent, but generally speaking the actual bodies were not produced.

SMALLPOX.

	1921.		1922.		1923.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Kyadondo ...	21	5	12	—	—	—
Kyagwe ...	28	5	11	—	3	—
Sese ...	11	3	—	—	—	—
Total ...	60	13	23	—	3	—

	1921	1922	1923
Vaccinations	22,132 ...	10,060 ...	13,446
„ Number examined ...	14,034 ..	4,728 ...	5,529
„ Number successful ..	11,510 ...	2,722 ...	3,649
Percentage successful of actual number examined	82% ...	59% ...	66%

The following Gombololas were visited during the year by the vaccinators:—

Kyagwe.—Mumyuka, Mutuba 1, Mutuba 6, Mutuba 7, and Musale.

Bugerere.—Mumyuka.

Vaccinia.—Five cases only were admitted during the year.

From the above figures, which show that over 45,000 people have been vaccinated during the last three years, mainly in Kyadondo and Kyagwe, it appears certain that a very fair percentage of the population in these districts are at the present time protected against Smallpox.

Five vaccinators were on tour throughout the year, but in 1924 I am making the number up to six.

CEREBRO-SPINAL MENINGITIS.

	1921.	1922.		1923.	
		Cases.	Deaths.	Cases.	Deaths.
Cases	7	14	13	16	12

Kampala Township.—Six cases with six deaths. During January two Indians died, one being treated at Namirembe Hospital, the other being rather a doubtful case. During March four cases occurred in the Kampala Jail among prisoners. They all had only recently entered, and investigation pointed to the probability of a carrier admitted from the Western Province. No more cases occurred here during the rest of the year.

Mengo District (outside township).—Eight cases with five deaths were distributed as follows:—

Nsambya 1—1, Katwe 1—nil, Mengo 5—3, Mulago 1—nil. The remaining two cases were from the Gombololas of Mutuba 1 and Mutuba 3, Kyadondo, one of the two cases died, and they, like five of the other cases, were treated and the report sent to me by Dr. Albert Cook, C.M.G., of the C.M.S., Namirembe.

As regards treatment, failing a serum we have to rely on lumber puncture aided by symptomatic treatment and good nourishment. Several drugs have been tried, such as N.A.B., acriflavine. I consider, however, that the germicidal action, of formalin, used in a 1% solution as a mouth wash to prevent spread of infection is of use. I advised Dr. Caldwell to use this at the Jail, after we had had three cases from 7th to 10th March, and only one other case occurred among the inmates of the infected cell, amongst whom was the suspected carrier.

MEASLES.

140 cases were reported to this office during the year with no death, against 303 in 1922 and 147 in 1921. This does not include Kampala cases, which will be found in the Senior Medical Officer's returns.

CHICKEN POX.

51 cases against 127 in 1922, and 91 in 1921. As above, this does not include cases at the Civil Hospital.

INFLUENZA.

This was fairly widely spread throughout the district. It was of a mild type, and there are no numbers available, and reports sent to me *re* deaths due to it were all in old people. 960 cases were treated at the Civil Dispensary, Kampala, with one death.

WHOOPING COUGH.

No report from district; 39 cases were treated at the Civil Dispensary with no deaths.

DYSENTERY.

11 cases of the amœbic type were treated at the Civil Dispensary

MALARIA.

From the return this appears to be on the increase, but I imagine this is due probably to more careful microscopical work than to an increase in malarial endemicity. I feel perfectly confident that if the same thoroughness regarding microscopical work, as is done now by Dr. Marshall and Mr. Achhru Ram, had been carried out a few years back, one would find that instead of an increase in cases, we should actually have a decrease. This year the following figures have been given me by Dr. Marshall:—

Number of officials who suffered from Malaria	166
Number of days off duty	253½
Number of days under treatment	1,978

This gives each of these officials 1·5 days off duty, and allowing the average daily number of officials resident in Kampala, both Europeans and Asiatics, to be 65·24 and 76·35 respectively, with a combined total of 141·59 (this I have worked out very carefully from office returns) the average daily number off duty works out at 1·8.

BLACKWATER FEVER.

32 cases with seven deaths, compared to 26 cases with three deaths in 1922, reported by Medical Officer, Civil Hospital. Seven cases occurred in July.

ANTI-MALARIAL WORK.

During the year the anti-malarial gang, five in number up to July, and seven since then, have done routine visits all over the township, searching for conditions liable to harbour or breed mosquitoes and reporting the same to this office. During September, I visited, inspected, and reported on every official's house in the station as requested by the Honourable the Chief Secretary. There is hardly a sound guttering in the station, and the mosquito wire in many houses was in bad repair. This inspection was instituted with a view to fixing the responsibility for any sanitary defects found to exist, but as far as I can see very little has so far been done to remedy structural defects to which attention has been drawn.

In July I sent round a circular memo to all Heads of Departments and commercial firms calling attention to the condition of compounds as regards long grass, excessive number of trees, shrubs, creepers in gutterings and on roofs, and to the presence of several grass-roofed structures. Since then compounds have been kept in a very much better condition, although there are still several where bushes and trees are so thickly crowded as to hinder proper ventilation and to act as shelter for mosquitoes.

I had one man employed solely on an anopheline search, and throughout the year no anopheline larvæ have been found away from the swamp area, where they were frequently found in open drains, holes, and burrow pits.

Adult anophelines were found occasionally in certain houses in the residential area. These may find their way up the hill by their own unaided efforts from the swamp areas on either side of it, or may possibly be carried up in the form of eggs, larvæ or pupæ in collections of water drawn from these swamp areas for the use of the Jail, etc., and for building purposes.

The greatest number of larvæ were found from April to July, which was the period of maximum rain-fall, 23·77″ on 50 days out of a yearly total of 49·33 on 113 days.

Larvicide (crude oil 1, kerosine 2, with a sufficiency of sawdust to make it easily handled) has been used in the swamp area and rain-water drums, and I think with success.

Culex and *Stegomyia* were fairly numerous throughout the station in open drains, tanks, drums etc., but the number of larvæ found showed a distinct falling off during the last five months, due to stricter action being taken as regards storage of water in tanks and drums. 173 official notices were served to remove conditions liable to breed larvæ compared with 77 and 22 in 1922 and 1921 respectively. Type-written preliminary notices were sent first, and only when these were disregarded was an official notice served.

Typhoid Fever.

Reports of 16 cases (with three deaths) which were treated in hospital during the year were recorded; eight of them occurred amongst prisoners in the Central Jail, Kampala, and of these two died. From the evidence available it seems most likely that the infection was contracted within the Jail, probably from a carrier or carriers. Six of these cases were diagnosed as due to the *Bacillus typhosus* by Dr. Duke by the agglutination test, and of these six, two died (one of perforation). No record of the type of disease is recorded in the other two. These cases occurred as follows:—June 2, July 2, September 1, December 3.

Of the other eight cases, six were treated in the Mill Hill Mission Hospital, Nsambya, and two in the Church Missionary Society Hospital at Namirembe, and of these eight, one died in Namirembe Hospital — this case was that of a Muganda who was taken ill on his way back from Ankole. The homes of all these eight cases were near Kampala.

Most of the Nsambya cases were definitely diagnosed by the agglutination test by Dr. Duke; two of them contracted the disease from looking after other cases, and two others came from the same village, Munyonyo, and were admitted in the same month.

Of the 16 cases—12 were Baganda, whilst there were one Munyankole, one Mukedi, one Alulu, and one Munyoro.

Swamp Drainage.

Like last year, no new subsoil drains have been constructed. I was asked to forward a scheme, but found it absolutely impossible to spare the necessary time to do so. Mr. Maitland, who was to assist me, was also similarly placed. Hence the work during the year has been confined to clearing bush and grading and training main and side channels. Prison labour, averaging about 50 men working from three to five hours a day on five days of the week, has been mainly employed, reclaiming and preparing for planting the area north of Kyagwe Road; they reaped 8,960 lbs. of potatoes during October and November.

I was allowed 50 prisoners for bush clearing at Port Bell for the months of August and September, during which period the Railway authorities and Mr. H. A. Mackenzie also had gangs on for the same purpose. I have again asked for them as the place is getting overgrown.

During the year several men employed by the Township Authority have built small houses in the swamp area below the Bombo road near the Nakivubo River. They have planted potatoes and other food crops, and as they keep their plots clean and weeded I consider that their presence there is actually a help in rendering this area dry and free from bush. A further improvement in this area will occur when the new native sports ground, west of the Nakivubo and south of the road to Namirembe, is completed. It will mean a permanent clearing of over eleven acres in extent.

The Agricultural Department have had an average of twenty men employed daily, weeding and cutting sugar cane and planting maize and grevillea seedlings.

As regards any future scheme, many of the present open drains will have to be filled in with rubble over porous tile subsoil pipes. This will result in a great saving of labour which is ordinarily necessary to keep the present open drain cleared, weeded and graded.

TOWNSHIP MASONRY DRAINS.

During the year the Building Inspector has completed 899 feet of permanent drains, and repaired 492 feet. This is more than double the work done during 1922.

GENERAL SANITATION CONDITION.

This, I consider, has been quite good, especially with the funds at our disposal, considering that we have a very large commercial township with 16 miles of metalled and gravelled roads to maintain and keep clean and an enormous daily influx of outside natives.

Only a person actually resident in Kampala, and connected with general sanitation work can realise the difficulties I and my staff have to contend with. Labour has to be supervised, and when one considers that a daily average of 977 men are employed on township work in numerous gangs scattered over a very large area, it stands to reason that the supervision necessary to get the maximum work out of the labour is impossible with the staff available for the purpose.

H. R. NEILSON,
Sanitation Officer,
Kampala.

TABLE P.

Summary of Routine Sanitary Work done during the Year.

1. NAME OF TOWN.—ENTEBBE.

———	Approximate area.	Number of proclaimed open spaces.
1921 ...	12 square miles ...	13
1922 ...	12 square miles ...	13
1923 ...	12 square miles ...	13

2. POPULATION.

———	NUMBER OF EUROPEANS.		NUMBER OF ASIATICS.		NUMBER OF NATIVES.		TOTAL.
	Males.	Females.	Males.	Females.	Males.	Females.	
1921 ...	143	86	321	120	2,307	2,692	5,669
1922 ...	110	67	202	88	2,358	2,164	4,989
1923 ...	117	73	234	104	2,466	2,152	5,146

3. HOUSING.

———	Number occupied by Europeans.	Number occupied by Asiatics.	Number occupied by Natives.
Number of Houses :—			
1921 ...	80	457	
1922 ..	90	105	285
1923 ...	96	138	385
Number of Huts :—			
1921			1,350
1922			3,071
1923			1,539

4. ERECTION OF NEW BUILDINGS DURING THE YEAR.

	1921	1922	1923
Number of houses built without sanction	—	—	—
Number of huts built without sanction	—	—	—

ACTION TAKEN.

———	Number of Prosecutions	
	Huts.	Houses.
1921	—	—
1922	—	—
1923	—	—

5. LATRINES.

———	For Males.		For Females.	
	Number.	Number of seats.	Number.	Number of seats.
Number of Public Latrines :—				
1921	5	24	—	—
1922	5	24	—	—
1923	5	24	—	—
Number of new Public Latrines erected during the year :—				
1921	1	6	—	—
1922	—	—	—	—
1923	—	—	—	—

LATRINES—*contd.*

——	1921	1922	1923
Number of Private Latrines	299	450	375
Average number of pails of nightsoil removed daily	410	450	465
Average number of soiled pails removed and clean pails substituted...	44	51	34
Number of nightsoil men employed to clean latrines and remove excreta	24	24	24
Number of cesspools	917	1,108	1,011
Number of cesspools cleansed	—	—	—
Number of new cesspools constructed during the year	453	567	548
Number of old cesspools abolished	453	376	645

6. REMOVAL OF REFUSE.

——	1921	1922	1923
Number of dustbins	208	137	171
Number of carts at work daily to remove refuse from streets ...	9	9	9
Amount of refuse removed daily	27	27	27
Number of carts at work daily to remove refuse from yards and premises	Included in above		
Amount of refuse removed daily from yards and premises (cart loads)			
Number of men employed for removing refuse	18	18	18

7. MODE OF DISPOSAL OF EXCRETA, REFUSE, AND OFFAL.

——	Daily average number of pails of Excreta.			Daily average number of cartloads of Refuse.			Daily average number of cartloads of Slaughter House and Market Offal.		
	1921	1922	1923	1921	1922	1923	1921	1922	1923
Buried or trenched ...	410	450	465	27	27	27	1	1	1
Burnt	—	—	—	—	—	—	—	—	—
Thrown into sea ...	—	—	—	—	—	—	—	—	—
Otherwise dealt with ...	—	—	—	—	—	—	—	—	—

8. AVERAGE DAILY NUMBER OF CARTLOADS OF TIN CANS, BOTTLES, BROKEN CROCKERY, AND OTHER INCOMBUSTIBLE MATERIALS REMOVED FROM HOUSES, HUTS AND COMPOUNDS.

1921	1922	1923
$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$

9. WATER SUPPLY.

Nature of Water Supply.	1921	1922	1923
PIPE-BORNE WATER :—			
Source (river, lake, or spring) :—			
Number of stand-pipes along roads	—	—	—
Number of stand-pipes in compounds and houses ...	—	—	—
WELLS :—			
Public :—			
Number	16	28	30
Number with pumps protected against surface water and mosquito-protected	—	—	—
Private :—			
Number	1	3	3
Number protected against surface water and mosquito-protected	—	—	—
TANKS :—			
Public :—			
Number mosquito-protected and served by pumps ...	—	—	—
Number above ground	—	—	—
Number mosquito-protected	—	—	—

WATER SUPPLY—*contd.*

Nature of Water Supply.	1921	1922	1923
TANKS—*contd.*			
Private :—			
Number underground	3	3	3
Number mosquito-protected	3	3	3
Number above ground	139	152	284
Number mosquito-protected	132	149	284
Number of 400 gallons capacity or less	6	6	6
Number above 400 gallons	126	149	281
Nature of tank :—			
Wood	...	...	...
Iron	18	18	52
Concrete	114	134	232
Barrels .—			
Number	70	46	44
Number mosquito-protected	15	17	27

10. DRAINAGE.

Nature of Drainage.	Public.	Private.
Masonry drains :—		
Linear yards of masonry drains :—		
1921	2,161	612
1922	2,161	617
1923	2,450	617
Linear yards reconstructed during the year :—		
1921	...	...
1922	...	...
1923	...	67
Linear yards repaired during the year :—		
1921	...	...
1922	...	50
1923	..	...
Linear yards of new drains constructed during the year :—		
1921	...	...
1922	...	5
1923	289	...
Earth drains or ditches :—		
Number of linear yards of ditches cleaned :—		
1921	No record	No record
1922	"	"
1923	"	"
Number of linear yards of ditches dug and graded :—		
1921	No record	No record
1922	"	"
1923	"	"
Average frequency of clearing ditches of grass :—		
1921	1 monthly	1 monthly
1922	"	"
1923	"	"

11. INSPECTIONS AND PROSECUTIONS.

———	1921	1922	1923
Number of inspectors employed	2	2	2
Number of houses inspected	457	480	519
Number of houses where larvæ were found	7	10	24
Number of notices served to remove conditions causing the breeding of larvæ	7	10	24
Number of persons fined for having mosquito larvæ on premises	...	...	...
Number of notices served to remove insanitary conditions on premises	12	20	62
Number of persons fined for not removing insanitary condition after notice	...	...	...
Number of soda ærated water factories inspected	1	1	1

27TH MARCH, 1924.

H. A. MACKENZIE,
District Commissioner, Entebbe.

TABLE P.

Summary of Routine Sanitary Work done during the Year.

1. NAME OF TOWN.—JINJA.

—	Approximate area.	Number of proclaimed open spaces.
1921 ...	2,560 acres, approx. 4 square miles	7 Tennis Courts, Goans and Indians; 2 Sports Club grounds and one square.
1922 ...	,, ,, ...	10 ,, ,, ,,
1923 ...	,, ,, ...	11 ,, ,, ,,

2. POPULATION.

—	NUMBER OF EUROPEANS.		NUMBER OF ASIATICS.		NUMBER OF NATIVES.		TOTAL.
	Males.	Females.	Males.	Females.	Males.	Females.	
1921 ...	42	13	2,016	1,403	Asiatics	including	3,475
1922 ...	32	16	2,345	1,470	Nat	ives	3,863
1923 ...	42	19	600	220	2,202	1,338	4,421

3. HOUSING.

—	Number occupied by Europeans.	Number occupied by Asiatics.	Number occupied by Natives.
Number of Houses :—			
1921 ...	64	321	—
1922 ..	65	316	—
1923 ...	67	324	—

Number of Huts :—	
1921	830 approx.
1922	860 ,,
1923	840 ,,

4. ERECTION OF NEW BUILDINGS DURING THE YEAR.

	1921	1922	1923
Number of houses built without sanction	—	—	—
Number of huts built without sanction	—	—	—

ACTION TAKEN.

—	Number of Prosecutions	
	Huts.	Houses.
1921	—	—
1922	—	—
1923	—	—

5. LATRINES.

—	For Males.		For Females.	
	Number.	Number of seats.	Number.	Number of seats.
Number of Public Latrines :—				
1921	41	—	—	—
1922	43	—	—	—
1923	46	—	—	—
Number of new Public Latrines erected during the year :—				
1921	2	—	—	—
1922	2	—	—	—
1923	3	7 each	—	—

LATRINES—*contd.*

—	1921	1922	1923
Number of Private Latrines	324	325	331
Average number of pails of nightsoil removed daily	614	635	675
Average number of soiled pails removed and clean pails substituted...	—	—	331
Number of nightsoil men employed to clean latrines and remove excreta	33	33	39
Number of cesspools	—	43	43
Number of cesspools cleansed	—	—	—
Number of new cesspools constructed during the year	—	—	—
Number of old cesspools abolished	—	—	—

6. REMOVAL OF REFUSE.

—	1921	1922	1923
Number of dustbins	11	50	50
Number of carts at work daily to remove refuse from streets ...	7	9	3
Amount of refuse removed daily	65	95	30
Number of carts at work daily to remove refuse from yards and premises	—	—	6
Amount of refuse removed daily from yards and premises (cart loads)	—	—	70
Number of men employed for removing refuse	30	30	50

7. MODE OF DISPOSAL OF EXCRETA, REFUSE, AND OFFAL.

—	Daily average number of pails of Excreta.			Daily average number of cartloads of Refuse.			Daily average number of cartloads of Slaughter House and Market Offal.		
	1921	1922	1923	1921	1922	1923	1921	1922	1923
Buried or trenched ...	630	660	700	37	40	60	1	2	3
Burnt	—	—	—	—	—	—	—	—	—
Thrown into sea ...	—	—	—	—	—	—	—	—	—
Otherwise dealt with ...	—	—	—	—	—	—	—	—	—

8. AVERAGE DAILY NUMBER OF CARTLOADS OF TIN CANS, BOTTLES, BROKEN CROCKERY, AND OTHER INCOMBUSTIBLE MATERIALS REMOVED FROM HOUSES, HUTS AND COMPOUNDS.

1921	1922	1923
5	8	11

9. WATER SUPPLY.

Nature of Water Supply.	1921	1922	1923
PIPE-BORNE WATER :—			
Source (river, lake, or spring) :—			
Number of stand-pipes along roads	—	—	—
Number of stand-pipes in compounds and houses ...	—	—	—
WELLS :—			
Public :—			
Number	—	—	—
Number with pumps protected against surface water and mosquito-protected	—	—	—
Private :—			
Number	—	—	1
Number protected against surface water and mosquito-protected	—	—	—
TANKS :—			
Public :—			
Number mosquito-protected and served by pumps ...	—	—	—
Number above ground	—	—	—
Number mosquito-protected	—	—	—

WATER SUPPLY—*contd.*

Nature of Water Supply.	1921	1922	1923
TANKS—*contd.*			
Private :—			
Number underground	—	—	—
Number mosquito-protected	—	—	—
Number above ground	50	58	65
Number mosquito-protected	50	58	65
Number of 400 gallons capacity or less	47	55	62
Number above 400 gallons	3	3	3
Nature of tank :—			
Wood	—	—	—
Iron	37	45	45
Concrete	13	13	20
Barrels .—			
Number	—	—	—
Number mosquito-protected	—	—	—

10. DRAINAGE.

Nature of Drainage.	Public.	Private.
Masonry drains :—		
Linear yards of masonry drains :—		
1921	350	700
1922	550	750
1923	800	770
Linear yards reconstructed during the year :—		
1921	50	200
1922	...	...
1923	...	...
Linear yards repaired during the year :—		
1921	34	...
1922	25	...
1923	25	...
Linear yards of new drains constructed during the year :—		
1921	...	...
1922	200	50
1923	250	20
Earth drains or ditches :—		
Number of linear yards of ditches cleaned :—		
1921	1,600 yards including the new Township	...
1922		...
1923		...
Number of linear yards of ditches dug and graded :—		...
1921		...
1922		...
1923		...
Average frequency of clearing ditches of grass :—		
1921	Every month	...
1922		...
1923		...

11. INSPECTIONS AND PROSECUTIONS.

———	1921	1922	1923
Number of inspectors employed	2	2	2
Number of houses inspected	318	316	324
Number of houses where larvæ were found	20	5	...
Number of notices served to remove conditions causing the breeding of larvæ	35	30	25
Number of persons fined for having mosquito larvæ on premises	...	...	...
Number of notices served to remove insanitary conditions on premises	60	75	100
Number of persons fined for not removing insanitary condition after notice	...	...	...
Number of soda ærated water factories inspected	...	...	1

H. M. TUFNELL,
District Commissioner, Jinja.

20TH FEBRUARY, 1924.

TABLE P.

Summary of Routine Sanitary Work done during the Year.

1. NAME OF TOWN.—KAMPALA.

—	Approximate area.	Number of proclaimed open spaces.
1921 ...	3,220	8
1922 ...	3,220	8
1923 ...	3,220	8

2. POPULATION.

—	NUMBER OF EUROPEANS.		NUMBER OF ASIATICS.		NUMBER OF NATIVES.		TOTAL.
	Males.	Females.	Males	Females.	Males.	Females.	
1921 ...	161	82	642	312	1,320	304	2,821
1922 ...	176	108	709	325	1,261	362	2,941
1923 ...	188	109	743	337	1,304	407	3,088

These figures do not represent an average.

3. HOUSING.

—	Number occupied by Europeans.	Number occupied by Asiatics.	Number occupied by Natives.
Number of Houses :—			
1921 ...	137	404	483
1922 ..	149	408	525
1923 ...	135	416	537

Number of Huts :—	
1921	1,073
1922	1,076
1923	1,040

4. ERECTION OF NEW BUILDINGS DURING THE YEAR.

	1921	1922	1923
Number of houses built without sanction	—	—	—
Number of huts built without sanction	33	—	—

ACTION TAKEN.

—	Number of Prosecutions	
	Huts.	Houses.
1921	—	—
1922	—	—
1923	—	—

5. LATRINES.

—	For Males.		For Females.	
	Number.	Number of seats.	Number.	Number of seats.
Number of Public Latrines :—				
1921	16	74	2	14
1922	16	74	2	14
1923	16	74	2	14
Number of new Public Latrines erected during the year :—				
1921	2	16	—	—
1922	—	—	—	—
1923	—	—	—	—

LATRINES—*contd.*

———	1921	1922	1923
Number of Private Latrines	795	822	856
Average number of pails of nightsoil removed daily	878	1,020	1,054
Average number of soiled pails removed and clean pails substituted...	9	33	74
Number of nightsoil men employed to clean latrines and remove excreta	69	76	85
Number of cesspools	—	—	—
Number of cesspools cleansed	—	—	—
Number of new cesspools constructed during the year	—	—	—
Number of old cesspools abolished	—	—	—

6. REMOVAL OF REFUSE.

———	1921	1922	1923
Number of dustbins	124	162	178
Number of carts at work daily to remove refuse from streets ...	16	16	16
Amount of refuse removed daily (cart loads)...	74	74	74
Number of carts at work daily to remove refuse from yards and premises	16	17	16
Amount of refuse removed daily from yards and premises (cart loads)	48	68	68
Number of men employed for removing refuse	83	83	85

7. MODE OF DISPOSAL OF EXCRETA, REFUSE, AND OFFAL.

———	Daily average number of pails of Excreta.			Daily average number of cartloads of Refuse.			Daily average number of cartloads of Slaughter House and Market Offal.		
	1921	1922	1923	1921	1922	1923	1921	1922	1923
Buried or trenched ...	883	1,020	1,054	—	—	—	2	2	2
Burnt	—	—	—	—	—	—	—	—	—
Thrown into sea ...	—	—	—	—	—	—	—	—	—
Otherwise dealt with ...	—	—	—	70	68	68	—	—	—

8. AVERAGE DAILY NUMBER OF CARTLOADS OF TIN CANS, BOTTLES, BROKEN CROCKERY, AND OTHER INCOMBUSTIBLE MATERIALS REMOVED FROM HOUSES, HUTS AND COMPOUNDS.

1921	1922	1923
2	2	2

9. WATER SUPPLY.

Nature of Water Supply.	1921	1922	1923
PIPE-BORNE WATER :—			
Source (river, lake, or spring) :—			
Number of stand-pipes along roads	—	—	—
Number of stand-pipes in compounds and houses ...	—	—	—
WELLS :—			
Public :—			
Number	6	6	6
Number with pumps protected against surface water and mosquito-protected	6	6	6
Private :—			
Number	1	1	1
Number protected against surface water and mosquito-protected	1	1	1
TANKS :—			
Public :—			
Number mosquito-protected and served by pumps ...	—	—	—
Number above ground	—	—	—
Number mosquito-protected	—	—	—

WATER SUPPLY—*contd.*

Nature of Water Supply.	1921	1922	1923
TANKS—*contd.*			
Private :—			
Number underground	10	10	10
Number mosquito-protected	10	10	10
Number above ground	263	279	284
Number mosquito-protected	263	279	284
Number of 400 gallons capacity or less	148	155	160
Number above 400 gallons	125	134	134
Nature of tank :—			
Wood	—	—	—
Iron	218	227	227
Concrete	45	52	57
Barrels .—			
Number	6	2	—
Number mosquito-protected	—	—	—

10. DRAINAGE.

Nature of Drainage.	Public.	Private.
Masonry drains :—		
Linear yards of masonry drains :—		
1921	6,452	—
1922	7,030	—
1923	7,929	—
Linear yards reconstructed during the year :—		
1921	Nil	—
1922	„	—
1923	169	—
Linear yards repaired during the year :—		
1921	Nil	—
1922	„	—
1923	492	—
Linear yards of new drains constructed during the year :—		
1921	427	—
1922	578	—
1923	899	—
Earth drains or ditches :—		
Number of linear yards of ditches cleaned :—		
1921	7,346	—
1922	10,120	—
1923	9,302	—
Number of linear yards of ditches dug and graded :—		—
1921	670	—
1922	300	—
1923	45,511	—
Average frequency of clearing ditches of grass :—		
1921	6	—
1922	6	—
1923	12	—

11. INSPECTIONS AND PROSECUTIONS.

———	1921	1922	1923
Number of inspectors employed	6	2	3
Number of houses inspected	2,172	2,158	2,362
Number of houses where larvæ were found	286	353	219
Number of notices served to remove conditions causing the breeding of larvæ	22	77	173
Number of persons fined for having mosquito larvæ on premises	...	...	...
Number of notices served to remove insanitary conditions on premises	181	189	163
Number of persons fined for not removing insanitary conditions after notice	18	22	11
Number of soda ærated water factories inspected	2	2	2
Number fined for selling impure Milk	...	11	23

23RD JANUARY, 1924.

C. TIFFIN,
for Executive Officer, Township Authority.

SECTION VI.

Meteorology.

All available information under this head is embodied in the Blue Book.

The lake level records at Entebbe for the year are as follows:—

	Highest.	*Lowest.*
January	9·85	9·78
February	9·86	9·76
March	9·86	9·76
April	10·05	9·80
May	10·33	10·07
June	10·35	10·28
July	10·36	10·31
August	10·34	10·22
September	10·22	10·14
October	10·16	10·09
November	10·20	10·11
December	10·28	10·16

Note.—The zero of the gauge is 3,686·53 feet above the mean sea level.

SECTION VII.

Legislation.

The following legislation was enacted during the year:—

Infectious Diseases (Amendment) Ordinance of 1923.

REGISTRATION OF MEDICAL PRACTITIONERS AND DENTISTS.

The Ordinance governing Registration came into force on July 1st, 1913, since when and up to December 31st, 1923, the following have been placed on the Register:—

Registered Medical Practitioners	71
Dentist	1
Licensed Medical Practitioners	47

The numbers actually on the Register on December 31st, 1923, were as follows:—

Registered Medical Practitioners	35
Dentist	1
Licensed Medical Practitioners	24

Of the above 35 registered Medical Practitioners, six belong to the Church Missionary Society and one to the Mill Hill Mission; the remainder are in Government service.

The Board appointed for the purpose of the Ordinance consists of:—

The Honourable The Principal Medical Officer as Chairman, with three Medical Practitioners, including one non-Government Medical Practitioner, as members.

SCIENTIFIC PAPERS PUBLISHED DURING 1923 BY MEMBERS OF THE MEDICAL STAFF.

DR. H. L. DUKE, O.B.E.—

"Further inquiries into the Zoological Status of the polymorphic mammalian trypanosomes of Africa and the means by which they are spread in nature."—Parasitology, Vol. XV.

"The Transmission of *T. congolense* by *G. palpalis.*"—Annals of Tropical Medicine and Parasitology, Vol. XVII—Liverpool.

DRS. MARSHALL AND VASSALLO.—

"The Treatment of Trypanosomiasis (a further report)."—British Medical Journal, 10th February, 1923.

DR. R. E. McCONNELL.—

"A Case of Blackwater Fever complicated by Retinal Hæmorrhage". —The Journal of Tropical Medicine and Hygiene, December, 1922.

"A Case of Myositis Purulenta Tropica".—The Journal of Tropical Medicine and Hygiene, February, 1923.

RECOMMENDATIONS MADE IN 1922 AND ACTION TAKEN.

(1) Extension of sub-dispensaries—12 were completed in 1922 and 15 more were completed and staffed in 1923.

(2) Infantile Mortality Rates for Baganda to be included in future annual reports.—It was found impossible to get these rendered by the chiefs with any degree of accuracy this year, but some returns were made by the more highly educated chiefs and the rates given work out at 222 per thousand, which is thought to be inaccurate and rather an under-estimation, but it is a great beginning and more accurate results may be hoped for in the future.

(3) Treatment of Lepers. (*See* pages 7 and 23).

(4) Free distribution of Salvarsan substitutes recommended for treatment of Syphilis, Yaws, Tick Fever and Plague.—Effect has been given to earlier recommendations on this subject as far as our resources permitted. The amalgamation of special venereal disease work with general native work has been introduced gradually into the larger native units. Since all special expenditure on venereal disease measures has been ended and combined in general medical expenditure it is hoped to be able the more readily to give effect to the recommendations of the special workers on the matter. This will entail increased expenditure on medical stores, but there can be no question that such expenditure will prove a profitable investment for the Protectorate.

(5) Lunatics—present Hoima Prison. (*See* page 9).

(6) Furthering Venereal Diseases campaign. (*See* page 8).

R. J. A. MacMILLAN, MAJOR,
Acting Deputy Principal Medical Officer.

APPENDIX No. I.

Report on Blackwater Fever in Uganda for 1923.

1. 71 cases with 17 deaths were reported during 1923. 67 of these cases with 16 deaths were reported by Government Medical Officers and four cases with one death by Church Missionary Society's doctors.

The following table shows the number of cases, deaths and case death rates during the past 20 years:—

Year.	Cases.	Deaths.	Case death-rate.
			%
1904	10	2	20·0
1905	14	3	21·4
1906	41	4	9·8
1907	10	2	20·0
1908	13	2	15·4
1909	21	6	28·6
1910	26	6	23·1
1911	18	3	16·6
1912	45	9	20·0
1913	58	12	20·7
1914	82	21	25·6
1915	65	18	27·7
1916	46	10	21·7
1917	49	8	16·5
1918	40	7	17·5
1919	83	18	21·7
1920	56	7	12·5
1921	62	15	24·19
1922	83	14	16·8
1923	71	17	24·0

2. *Locality and Seasonal Variation.*—The following table shows the stations or localities at which the Blackwater Fever was contracted, the number of deaths, and the monthly variation:—

STATIONS.	January	February	March	April	May	June	July	August	September	October	November	December	1923 Total		1922 Total	
													Cases	Deaths	Cases	Deaths
BUGANDA KINGDOM.																
Entebbe	...	...	1	...	...	1	2	1	1	...	...	...	6	1	2	...
Kampala	3	2	3	3	...	3	7	3	4	1	2	1	32	7	26	3
Kampala C.M.S.	...	...	1	...	...	..	...	1	...	...	...	1	3	...	9	3
Bombo	...	...	...	...	...	...	...	...	...	1	...	...	1	1	2	1
Mubende	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Masaka	...	...	...	1	...	...	...	...	...	...	...	...	1	1	2	...
WESTERN PROVINCE.																
Mbarara	...	...	...	..	..	...	...	...	...	...	...	...	...	...	...	...
Toro	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kabale	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
NORTHERN PROVINCE.																
Hoima	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Masindi	...	...	...	...	...	...	...	...	...	1	...	...	1	...	...	...
Butiaba	1	...	...	...	...	...	...	...	1	1	...	...	3	...	6	...
Gulu	...	...	...	..	1	...	...	...	...	...	...	...	1	...	2	...
Atura	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Kitgum	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...
Arua	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...
EASTERN PROVINCE.																
Jinja	1	...	1	2	...	4	...	1	2	1	...	1	13	3	10	2
Namasagali	...	...	...	...	...	...	1	...	...	1	1	...	3	1	2	...
Mbale	...	...	...	...	...	1	...	...	1	1	1	...	4	2	13	3
Soroti	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...
Lira	...	2	...	...	...	...	...	...	...	...	...	1	3	1	1	1
TOTAL 1923	5	4	6	6	1	9	10	6	9	7	4	4	71	17	...	...
TOTAL 1922	7	3	8	3	9	10	10	8	8	4	9	4	...	...	83	14

The foregoing table shows that during 1923:—

43 cases with 10 deaths occurred in the Buganda Kingdom, as against 42 cases with seven deaths in 1922.

Nil cases in Western Province, as against nil cases in 1922.

Five cases with nil deaths in the Northern Province, as against 13 cases with one death in 1922.

23 cases with seven deaths in the Eastern Province, as against 28 cases with six deaths in 1922.

May was the month with the largest rainfall, 24·80 inches, and with the smallest number of cases.

June with a rainfall of 3·99 inches and July with a rainfall of 5·50 had the largest number of cases, *i.e.*, 10 each. January with ·24 of an inch had five cases.

3. *Race, Sex and Age Incidence:*—

	Nationality.			
	Europeans.	Indians.	Goans.	Cingalese.
SEX:—				
Males	10	47	13	1
Females	1	9	2	—
DEATHS:—				
Males	3	8	—	—
Females	—	6	—	—

AGES.

	Under 10	*11-20*	*21-30*	*31-40*	*41-50*	*over 50*	
Cases	5	7	31	17	9	2	= 71.
Deaths	3	2	6	4	2	—	= 17.

4. *Table showing incidence between officials and non-officials*:—

	Europeans.				Asiatics.				Total cases.
	Cases.		Deaths.		Cases.		Deaths.		
	M.	F.	M.	F.	M.	F.	M.	F.	
Officials	4	1	2	—	15	2	2	1	22
Non-officials	5	—	1	—	35	9	6	5	49
	10		3		61		14		—

5. *Length of residence in Tropics: European cases only*:—

	Under 1 year.	1—5	6—10	11—15	Many years but not known.
Europeans	—	5	2	1	2
Deaths	—	1	—	—	2

6. *Result.*—17 of the cases ended fatally and the recorded causes of death were:—

Heart Failure	10
Suppression and Heart Failure	3
Suppression and Uræmia	4

7. *Previous attacks of Blackwater Fever*:—17 cases had had previous attacks:—

9 cases had had 1 previous attack.

7 cases had had 2 previous attacks.

1 case had had 4 previous attacks.

Five of the 17 cases which ended fatally had had previous attacks of Blackwater Fever.

2 fatal in second attack.
3 fatal in third attack.

8. *Predisposing Causes.*—17 cases had had previous attacks of Blackwater Fever, and all of them had suffered from malaria since their last attack.

Other 53 cases had histories of previous and more or less frequent attacks of malarial fever inadequately treated, and one case where no previous history could be obtained owing to the patient being *in extremis*.

9. *Exciting Causes.*—The supposed exciting cause has been recorded in 67 of the cases:—

Over-exertion	31
Chill	22
Debility	9
Working while feverish	2
Malaria attack	2
Quinine intolerance	1
Unrecorded	4

10. *Quinine Habits.*—Quinine was taken as a prophylactic as follows:—

Regularly.	Irregularly.	Not taken.	Unknown.
6	51	9	5

11. *Mosquito Netting.*—An analysis of the records of these cases of Blackwater Fever shows that the use of a mosquito net at night and living in a proofed house are not sufficient protection against malaria.

Adequate doses of quinine must be taken as well.

12. Anopheles mosquitoes are prevalent in the localities where the Blackwater Fever was contracted.

13. *Blood Examination.*—This was possible in 49 cases only, and an analysis shows that during the attack of Blackwater, malarial parasites were found as follows:—

11 cases were negative.
18 cases Sub-tertian.
6 cases Benign Tertian.
14 cases Mixed infection (Sub-tertian and Benign).

14. *Duration of Hæmoglobinuria.*—

(*a*) In cases without relapse :—60 cases with 15 deaths occurred without relapse.

	Unknown	Under 1 day	1 day	1½ days	2 days	2½ days	3 days	4 days	7 days
Cases ...	3	7	4	10	16	6	7	5	2
Deaths ...	1	—	—	3	3	2	1	4	1

(*b*) *In cases with Relapse* :—Relapse Cases :—Eleven cases had relapses—
7 cases relapsed once with 2 deaths
3 cases relapsed twice—no deaths
1 case relapsed six times and recovered.

Cases.	Original attack.	Interval.	1st Relapse.	Interval.	2nd Relapse.	Result.
1	96 hours	12 hours	32 hours ...	—	—	Died
1	86 hours	12 hours	48 hours ...	—	—	Recovery
1	84 hours	24 hours	then 6 relapses in 33 days ...	—	—	Recovery
1	55 hours	37 hours	72 hours suppression for 57 hours ...	—	—	Died
1	50 hours	31 days	38 hours ...	—	—	Recovery
1	48 hours	24 hours	2 hours	32 hours	2 hours	Recovery
1	38 hours	12 hours	60 hours ...	—	—	Recovery
1	34 hours	21 days	43 hours ...	—	—	Recovery
1	24 hours	36 hours	2 hours ...	4 days	3 hours	Recovery
1	24 hours	3½ days	24 hours ...	2 days	18 hours	Recovery
1	12 hours	7 days	12 hours ...	—	—	Recovery

15. *Signs and Symptoms.*—Apart from the *prodromata* and *Hæmoglobinuria* 69 of the 71 cases complained of great thirst, 67 had enlarged spleen, jaundice occurred in 66, vomiting in 53, and enlarged liver in 19.

45 cases complained of pain and tenderness in the regions of the liver, kidney and spleen, 21 had no pain or tenderness, and it was not recorded in five cases.

16. *Albuminuria* occurred in 70 cases :—

The urine was Acid in 33 cases.
Neutral in 11 cases.
Alkaline in 6 cases.
Re-action not mentioned in 21 cases.

17. *Complications.*—

Retention occurred in 7 cases,
Suppression occurred in 7 cases.
Uræmia occurred in 4 cases.
Hiccough occurred in 5 cases.

18. *Treatment.*—Apart from general and symptomatic treatment the following methods were employed :—

Quinine Injections, 25 cases 5 deaths.
Hearsey's Mixture, 22 cases 1 death.
Hearsey's plus Quinine Injections, 6 cases 2 deaths.
Pituitary Extract plus Quinine Injections, 10 cases 4 deaths.
Pituitary Extract and Hearsey's, 3 cases 2 deaths.
Pituitary Extract and Saline, 1 case 1 death.
Sulfarsenol, 1 case 0 death.
Neokharsivan, 1 case 1 death.
No treatment mentioned, 2 cases 1 death.

Several cases are noted, and many others have been noted, where relapses, with a corresponding rise in temperature and lowering of the condition of the patient, followed every time an injection of quinine was given, and as this is hazardous to the life of the patient, the promiscuous use of quinine during the attack of *hæmoglobinuria* is not advocated. The use of it therefore should be governed by some factor, *e.g.*, persistence of malarial parasites in the blood during an attack, hyperpyrexia, vomiting or other distressful symptoms persisting.

19. In conclusion I would this year again draw attention to the fact that the stations in the Western Province (altitude over 4,000 feet) were free from cases of Blackwater Fever.

I would also emphasize the fact that a malarial history was obtained in every Blackwater case with one exception, and this was too far gone to give any history.

Also that the seventeen cases, who had suffered from previous attacks of Blackwater, all had histories of having suffered from malaria since their last attack.

What would appear to be of vital importance in the prevention of this disease is the adequate treatment and after treatment under supervision of a malarial attack.

R. J. A. MACMILLAN, MAJOR,
Acting Deputy Principal Medical Officer.

APPENDIX No. II.

Annual Report on Enteric Fever for 1923.

Sir,

I have the honour to inform you that twenty-six cases of Enteric Fever were reported during the year 1923—three in Europeans, five in Indians, and 18 in natives. All these patients recovered save two—both natives. All the native cases which were subjected to bacteriological examination owed their infection to *B. typhosus*. Infection of natives with *B. para typhosus A* and *B*, have been observed, but typical clinical typhoid cases were all traced to *B. typhosus*. Investigations are in progress at the Laboratory to determine the prevalence of enteric, and a report on the disease in natives of the Protectorate has been sent to England for publication.

I have the honour to be,
Sir,
Your obedient servant,

H. L. DUKE,
Bacteriologist.

THE HON'BLE
THE PRINCIPAL MEDICAL OFFICER,
ENTEBBE.

APPENDIX No. III.

Annual Report on Venereal Disease Measures.

Covering Report by Major G. J. Keane, D.S.O.

1. This annual report marks an important stage in the history of venereal disease measures in the Protectorate. It is now proposed to discontinue the special venereal disease reports which have hitherto formed annexures to the Annual Report, and replace them by special tables annexed to the Annual Report showing details of cases treated and their attendances with a special reference to them in the report. It is also proposed to modify very considerably the organisation for the recording of treatment of venereal disease, as with the increasing success of these measures, the figures on all hands are increasing by bounds, and the clerical work in keeping an accurate record of each patient and the tabulation of their records threatens to interfere seriously with the medical work. During the past year a duplicate card system has been maintained relating to each patient, and the present figures have been obtained by Dr. Webb by a personal close scrutiny of some 17,000 cards. Moreover, under the general re-organisation that has taken place, the head quarters of venereal disease measures activity, Mulago, is being converted into a general hospital and a training centre depot for European and native staff.

2. *Defaulters' List.*—The principle of purely voluntary attendance and re-attendance is being relied upon more and more. The older arrangement of recording and sending summonses to defaulters in attendance through the Chiefs has had to be allowed to lapse, as with the growth and development of the work, the task of looking through 17,000 cards or more weekly to ascertain defaulters is one for which neither time nor staff is available, nor, indeed, could the native Government undertake the search for defaulters in the greater numbers now involved.

Venereal Disease Auxiliary Centres.—These were until recently strictly limited to treatment of venereal disease. They are now thrown open for the treatment of all diseases in response to repeated representation from native authorities. This can better be carried out if the present somewhat elaborate *regimen* for registering and supervising attendance for venereal disease is reduced so as to give the staff more time for general work.

3. *Vital Statistics : Buganda.*—Buganda has been the scene of the greatest activity in venereal disease work, and particularly the district about Kampala. The year past shows the nearest approximation between births and deaths that has ever occurred during the history of British Administration in Uganda, and an excess of births over deaths in Buganda is now clearly envisaged. It is believed the tide has now definitely set in the direction of a steady increase in population and this will remain so. The change is a welcome one, and though venereal disease measures do not claim the result as entirely due to their effects, there can be no doubt that these measures have played a very important part. Other factors are the work of the Mission Hospitals, especially that of Dr. Albert and Mrs. Cook, both in their general work and especially in the institution of the Maternity Training School and central and rural lying-in hospitals and Infant Welfare centres. The abolition of Kasanvu has also probably had an immense reaction on conditions of native home life and contributed to improvement in vital statistics.

4. *Programme for the future.*—(1) This will consist in the working up of organisation for the better training of native medical attendants, and for their employment under definite gradings and fixed terms of service, the spread of medical attendance to natives throughout the Protectorate by the extension of establishment of rural medical sub-centres in the charge of native assistants where all native ailments will be treated while special treatment and attention will still be directed to venereal disease.

(2) Together with this will be carried on the gradual building up of a large central native hospital at Mulago, Kampala, with a two-fold purpose :—

(i) The routine treatment of general and venereal sick of the Kampala District.

(ii) To act as a training centre for (*a*) European Staff, Medical Officers and Nursing Sisters in the method of handling large native attendances; (*b*) African staff of the existing hospitals and of the new Medical School at Makerere; (*c*) to act as a depot or reserve of medical staff for the Protectorate.

Moreover, well organised and equipped central native hospitals are in process of establishment in all the main centres of the Protectorate on which will be based sub-dispensaries in the charge of native assistants under the supervision of District Medical Officers.

(3) The proper conduct of the treatment of African sick on a large scale necessitates the arrangement of an efficient and properly organised native staff, and with this end in view a thorough organised re-organisation of the native medical service is being attempted.

5. *Bunyoro.*—The vital statistics of this portion of the Northern Province have for some time past been disquieting and venereal disease prevalence is reported to be more extensive there than in any other part of the Protectorate, a 90% infection being reported by Dr. Cook and confirmed by Dr. Lee. With a view to alleviating this situation Dr. S. W. T. Lee was sent after one year's experience at Mulago to conduct an anti-venereal campaign in Bunyoro, while undertaking also the general native medical work of the district. Up to the present the result of this campaign has been most gratifying. Dr. Lee has established a large central hospital at Hoima and five sub-centres The attendances daily at Masindi and Hoima now reach *500 daily*, and there is every indication that the success of Mulago will be repeated in Bunyoro. The situation reflects great credit on Dr. Lee's administrative ability as well as his aptitude for handling native sick in such a manner as to secure their attendance and re-attendance.

It is hoped that the success already being effected in attendances will be reflected in due course in the vital statistics. It is proposed to continue the old system of records and defaulter arrangements until the campaign is well set.

Ankole.—The adoption of Mulago methods has been most successfully inaugurated in Ankole by Dr. Langton with excellent results. This work was unfortunately closed down owing to Dr. Langton's departure on leave, and no medical officer was available to replace him.

6. *Infantile Mortality Returns.*—These are gradually being introduced in those parts where the chiefs are sufficiently educated to contruct them. So far they show distinct alteration for the better in those parts where active anti-venereal disease measures have been introduced.

7. *Bismuth Synthetics.*—The use of Bismuth Synthetics in the treatment of syphilis is unfavourably reported on as being inimical to continued native attendance. Bismuth is always given intramuscularly. Intravenous injections are highly popular and are carried out in males and females by male native assistants who are often in independent charge of rural venereal clinics. Difficulty arises over the performance of intramuscular injections in female patients by male assistants—they are usually given in the buttock. Moreover, the Bismuth injections are painful, which adds to their unpopularity.

G. J. KEANE, Major,
Deputy Principal Medical Officer (N.S.)

Annual Report, Venereal Diseases Measures, Uganda, for 1923.

By Dr. W. L. Webb, Senior Medical Officer, Mulago.

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I. GENERAL.

1. *Buildings.*—Buildings completed during the year by the Public Works Department were:—2nd class house, 1; 3rd class house, 1; ward block, 52 beds, 1; extension to existing ward, 1; pack store, 1;

The following buildings were started in 1923 but were not completed by the end of the year:—

Drug store, 1; mortuary and post mortem room, 1; paraffin store, 1; underground tank, 1.

The total buildings in use at the end of 1923 were as follows:—Residences: European 7, Asiatic 1; temporary quarters for 70 natives, wards 52 bedded, 3; ward, temporary, 26 bedded, 1; out-patient department; dispensary; operating theatre; administrative and laboratory block; kitchen, laundry and mess block; incinerators and bucket latrines; food store, rough store, temporary; animal house; temporary garage; pack store.

2. *Auxiliary Centres.*—Existing centres at Mukono, Mbale, Kasangati, and Mityana were kept in repair and minor alterations made. A new centre at Wakiso was completed in May, comprising a three-roomed hospital building, quarters for three male and two female attendants, and the necessary out-houses. Owing mainly to labour difficulties, it was not found possible to complete the Centres under construction at Bowa and Nakifuma before the end of the year.

3. *Equipment.*—Supplies of hospital linen, uniforms, furniture, medical and surgical equipment, etc., were available in larger quantities than in previous years. The difficulty of providing adequate equipment for a rapidly growing organization like Mulago separate from its source of supply by some six months, will be appreciated. The improvement in this respect in 1923 was most satisfactory.

4. *Laundry.*—Hand-washing of about a hundred articles a day was the average undertaken during the year. Hand machines were ordered, but had not arrived by the end of the year. Disinfection of clothing and linen was carried out in steam Sack disinfectors. These are not large enough for the disinfection of mattresses and pillows, and it is desirable that a Thresh disinfector be installed at Mulago.

5. *Lighting.*—The only light available was that provided by paraffin lamps. This proved a great handicap, rendering urgent night surgery almost an impossibility. Actually it was found to be in the interests of the patient to leave all urgency cases till the morning, as long as it appeared probable they would live till then, rather than to operate on them in deficient light.

6. *Water.*—A 12,000 gallon underground tank is under construction. This will relieve the situation to a certain extent, but even then we shall not be able to expend more than 1¼ gallons per head per day. A regular supply of at least 10 gallons per head per day is necessary.

7. *Kitchen.*—No alterations were made in the kitchen arrangements. About 220 tons of green food (potatoes or bananas) were cooked during the year, in addition to extra diets.

8. *Conservancy.*—Twelve sweepers were employed. The bucket system of latrines was used throughout. All solid matter was incinerated, and liquid refuse run into soakage pits.

II. THE TREATMENT OF GENERAL DISEASES AT MULAGO.

In May, a fifty-two bedded ward block was opened for the admission and treatment of cases of general diseases. The Civil Hospital at Kampala was closed at the same time, and the cases transferred to Mulago. This block was at first directly under the care of the Senior Medical Officer, Kampala, but after a few weeks was handed over to Mulago. This was the first step in the conversion of Mulago from a purely venereal diseases hospital to a general hospital. It was not many weeks before this was filled and over-filled, and considerable overflow of general cases into the venereal wards was necessary. At the same time cases of general diseases were encouraged to attend the out-patient department, and towards the end of the year such cases were attending in considerable numbers. A similar change occurred at the auxiliary centres. No reliable figures of these attendances are available, as it was not until the end of the year that a system of recording such cases was introduced.

It was confidently expected that by throwing Mulago open to all diseases, a greatly increased attendance of venereal cases would result, as the stigma of attending a purely venereal hospital would be removed. Certainly there was a great increase in venereal practice in 1923, but, I imagine, not due to this cause as the relative number of non-venereal to venereal attendances was not great enough to provide efficient cover to the nature of the hospital. As the non-venereal practice increases the result on venereal attendances will, I am convinced, become obvious.

The extension of medical activities to general practice at Mulago threw a considerable amount of extra work on the staff. As far as in-patients go, it is obvious that a ward filled with serious medical and surgical cases requires considerably more attention than a ward filled with late syphilitics, stricture cases, etc. But the effect was felt even more in the out-patient department. The diagnosis of venereal diseases is usually simple, and the treatment largely routine. Consequently it is possible to pass through large numbers of such cases in a day. The vast majority of attendances for non-venereal diseases are for quite trivial conditions. But to establish the condition, each case needs a careful general examination, and this means that fewer cases of non-venereal than of venereal disease can be passed through the clinic in a day. To develop to its full the practice of general medicine at Mulago will mean an increase in medical officers and an increase in out-patient accommodation more adapted to the needs of the practice of general medicine.

The opening of an eye clinic by Major Owen, D.S.O., was an important step in the direction of converting Mulago to a general hospital. This is dealt with in a later paragraph.

III. WORK OF THE YEAR.

1. *Out Patient.*—Table I shows attendances, cases and their distribution for the year for all centres. Neither cases nor attendances of non-venereal diseases of a trivial nature are shown. This and other returns now given were compiled from a survey of over 17,000 case cards, and are concerned only with diseases taken on the case card register.

"Other Venereal Diseases" besides yaws and granuloma venereum include cases of bubo, phimosis or para phimosis, cases under observation for venereal disease, and a variety of conditions mainly connected with the external genitalia.

"Non-Venereal Diseases" in addition to leprosy, includes all cases admitted to wards in the latter part of the year, and certain other diseases, such as ankylostomiasis, suitable for routine out-patient treatment. The cases shown in item 7 of this table all received fairly adequate treatment and showed no active signs of disease when they ceased attendance. Item 8 represents defaulters who presumably received no benefit from attendance. Item 9 is mainly reported deaths from all causes and does not represent deaths in hospital. Item 11 is, of necessity, something of a prophecy. Patients resting between courses during the period December, 1923—January, 1924, were taken as attending, but of course there is no certainty that all of them will do so. The ratio of "attendances" to "cases treated" is in all cases high, averaging over 20 to 1.

2. *Injections.*—The number of injections given during the year at all centres was as follows:—

Mercury	82,687
Salvarsan substitutes	8,930
Antimony	7,063
Iodine	2,170
"Moogrol"	452
Stannous Chloride	257
Allyl Thiourea	171
Copper Sulphate	54
Zinc Sulphate	12
Bismuth Synthetics	17
Total	101,813

Nearly all, with the exception of the bismuth synthetics and a few mercury injections, were administered intravenously. Over 100,000 of these injections were given by natives.

Mercury.—The salt used for intravenous administration was mercuric cyanide in doses of ·2 grain weekly. This amount is just on the safe side for the Bantu natives of Uganda, but a careful lookout for signs of mercury poisoning has to be kept.

Salvarsan substitutes.—The substitutes used, in order of frequency, were "Sulfarsenol," "Novarsenobillon," "Neo Diarsenol," "Silver Salvarsan" and "Stabilarsan."

Antimony.—Antimony and potassium tartrate in grain doses was used in old tertiary syphilitic ulcerations, granuloma venereum, etc. It is of very marked value in late syphilitic conditions.

Stannous Chloride.—Copper sulphate and zinc sulphate were used experimentally in one-grain doses as substitutes for antimony. The action of stannous chloride is very similar to that of antimony. The other two seemed to have no particular effect.

Iodine.—Dr. W. L. Peacock suggested the intravenous injection of iodine as a substitute for potassium iodide by the mouth, which is not only expensive, but largely ineffective as the native is liable either to drink too much of a medicine given him in a bottle, or to barter it for more immediate advantages. One grain of iodine dissolved by means of 1½ grains potassium iodide in 5 c.c. of distilled water was given intravenously as a dose three times a week. The results were excellent, the drug having a rapid beneficial effect on the common bone and chest pains of tertiary syphilis and in many cases showing an effect better than that of antimony on extensive chronic tertiary ulcerations. Its disadvantages are that it often results in fibrosed veins, and in the case of accidental injection into subcutaneous tissue, leads to extensive sloughing. Care in giving the injection and slowness in its administration obviates both these disadvantages.

Moogrol was given in leprosy with marked beneficial results.

Allyl Thiourea in three grain doses was of use in cases of impenetrable stricture, resulting often in making the passage of a bougie comparatively easy. It was used experimentally in other conditions by Dr. W. L. Peacock with apparent success, but not, at the end of the year, on a sufficiently large scale to justify conclusions.

Bismuth Synthetics.—A few injections of bismuth synthetics were given, but the results did not compare with those of the salvarsan substitutes. Bulky intramuscular injections cause too much discomfort to make their routine use acceptable to the native.

3. OUT-PATIENT RETURNS BY CENTRES.

Name of Centre.	Attendances.	Total cases treated.	Injections.	Native Staff of Centre.
Mulago	91,805	5,639	47,077	20
Mukono	59,356	2,244	23,417	7
Kasangati	29,962	1,405	11,192	3
Mbale	33,856	1,013	10,859	5
Mityana	17,597	849	6,638	3
Wakiso (7 months only)	8,515	355	2,630	3
TOTAL ...	241,091	11,505	101,813	41

4. *Eye Clinic.*—A weekly Eye Clinic was started in July by Major H. B. Owen, D.S.O. By the end of the year 165 cases had presented themselves for treatment, whilst total attendances numbered 450. The immediate success of this clinic was evident. It is hoped that other clinics for special diseases may be started when staff is available. Major Owen's report for the year is given herewith.

"The Eye Clinic was started in July and is now regularly open on one morning a week. That it is filling a want is shown by the fact that 115 men and 50 women have attended since the commencement. The attendances at the last clinic of the year numbered 35, as many as can be efficiently examined in one morning. The principal conditions noted are as follows :—

	Cases.
Conjunctivitis	42
Trachoma	15
Trachoma complicated by entropion	17
Phlyctenular conjunctivitis and keratitis	4
Corneal ulcers and nebulæ resulting from ulcers	15
Dacryocystitis	5
Iritis and cyclitis	18

"Other conditions, though at present infrequent, are worth recording :—

Interstitial keratitis	1 case said to have had Sleeping Sickness.
do	1 case syphilitic.
Senile cataract	2 cases.
Chronic glaucoma	1 case.
Secondary optic atropy ...	1 case.
Detachment of retina ...	1 case.

"Errors of refraction are in this class of practice not looked for, for the reason that time does not permit of such work being undertaken. Neither is it necessary at present, in view of the fact that few, if any, patients are in a position to buy glasses.

"Three cases of astigmatism and three of myopia have been noted, however, while examining for suspected disease of the fundus. Operative work as yet had hardly begun, and some little time must elapse before confidence in operative treatment is established. With regard to the prevalence of particular diseases it is as yet too early to speak. There exists without doubt a great deal of preventable blindness and the establishment of this clinic is undoubtedly a step in the direction of the prevention of some of this blindness.

	Male	*Female*	*Total.*
New cases	115	50	165
Total attendances	296	154	450"

5. *In-Patients.*—When the general ward of the Civil Hospital, Kampala, was transferred to Mulago, there was for a time some confusion in recording admissions and discharges. This resulted in a number of cases never appearing on the In-Patient Register at all. Consequently the following return is an understatement, as it deals only with cases appearing in the In-Patient Register.

1.	No. of patients in wards on January 1st, 1923	110
2.	Patients admitted during the year	2,585
3.	Total of 1 and 2	2,695
4.	No. of patients remaining in wards on December 31st, 1923 ...	167
5.	Aggregate number of in-patient days	49,423
6.	Average daily number in wards	135·4
7.	Average duration in days of each patient in wards	18·4
8.	Died in wards	51

The following were the diseases recorded of those cases who died :—

Not diagnosed	9
Tertiary syphilis	7
Congenital syphilis	5
Pneumonia	5
Stricture	3
Ankylostomiasis	3
Amœbic dysentery	2
Secondary syphilis	2

Necrosis of jaw, jaundice and ascites, secondary syphilis and gonorrhœa, strangulated hernia, pericarditis, pyrexia of uncertain origin, phthisis, abscess, fracture of skull, intestinal obstruction, gonorrhœa, acute arthritis, nephritis, carcinoma, fæcal fistula, one each.

(NOTE.—The cases recorded as "Not Diagnosed" were mostly brought to hospital moribund, and no *post mortem* examination was performed).

6. *Surgical Work.*—A list of operations performed at Mulago under general anæsthesia is appended. Eye operations are included, although these were performed under local anæsthesia.

1.	Circumcisions	122
2.	Scrapings	120
3.	Dilatations of urethra	58
4.	Wheelhouse's operation Part I.	32
5.	Wheelhouse's operation Part II.	32
6.	Incision and drainage of abscesses (unspecified 7, breast 2, neck 3, Bartholin's gland 1, hand 3, foot 2, scrotum 2, Ischio rectal 1, peri urethral 1, abdominal wall 1, buttock 1, throat 1, stitch 1)	26
7.	Incision and drainage of cellulitis (unspecified 2, thigh 3, neck 5, leg and foot 6, arm and hand 4, buttock 2)	22
8.	Amputations (penis 4, upper arm 3, hand 1, finger 3, thigh 2, below knee 1, toe 2, scrotum 5, lip 1)	22
9.	Hernia (inguinal 11, double inguinal 1, strangulated 2, ventral 1)	15
10.	Removal of sequestra	11
11.	Excision of glands (groin 2, cervical 6)	8
12.	Excision of tumours (breast, penis, hæmorrhoids, knee, scalp, perineum, keloid and bony tumour, 1 each)	8
13.	Removal of venereal warts	7
14.	Eye operations (double entropion 4, single entropion 1, iridectomy 1)	6
15.	For the relief of prolapsed rectum	6
16.	Wheelhouse operations, Part I and II combined	4
17.	Sewing in catheter	4
18.	For hydrocele	4
19.	For septic arthritis of the knee	3
20.	For the relief of elephantiasis (foot 1, vulva 2)	3
21.	Cock's operation	4
22.	For ganglion	2
23.	For empyema	2
24.	Miscellaneous (quinsy 1, prostatectomy 1, wiring fracture 1, hernia testis 1, partial excision jaw 1, decompression 1, tendon lengthening 1, minor miscellaneous 21)	28
		549

All these cases were discharged from hospital cured or improved with the following exceptions, who died :—

Cellulitis neck	1
Strangulated hernia	1
Partial excision of jaw	1
Decompression, fractured skull	1
Total	4

In addition to a number of minor operations performed without anæsthesia, 1,643 dilatations of the urethra were undertaken for the relief of stricture. The majority of these were done at Mulago.

7. *Pathological Work.*—The laboratory, which had been closed for regular work towards the end of 1922, was re-opened on 25th May, 1923. By the end of the year the following investigations had been undertaken :—

1.	Serums tested for syphilis—		
	(*a*) By floculation test alone	683	
	(*b*) By Wasserman's test alone	992	
	(*c*) By both floculation and Wasserman test	4,088	
			5,763
2.	Microscopical examinations of blood films		824
3.	Microscopical examinations of fæces		294
4.	Microscopical and chemical examinations of urine		109
5.	Microscopical examinations of sputum		93
6.	Microscopical dark ground examinations		79
7.	Microscopical and chemical examinations of C.S.F.		12
8.	Preparation of autogenous vaccines		7
9.	Preparation of detoxicated gonococcus vaccine 315 c.c. Batches		2
10.	Miscellaneous investigations		107

The method used for the Wasserman test was that of Harrison. For the floculation test a four tube modification was used, with several different antigens. In my experience this test does not bear comparison with the Wasserman test. Agreements in the two tests were about 80%. In the 20% disagreements the clinical facts were almost invariably in favour of the Wasserman result. Other workers have obtained almost identical results with the two tests. It was hoped that the floculation test would provide a simple substitute for the Wasserman test in out-of-the-way parts of the world. But I am forced to the conclusion that to obtain results from the floculation test comparable to Wasserman results, a very high degree of excellence of technique is required, and this at once removes its only advantage over the Wasserman test.

V. THE ANTI-VENEREAL CAMPAIGN.

1. *Extension.*—The most notable advance in anti-venereal measures in Uganda during the year was the extension of the campaign to Bunyoro and Ankole.

The increase of work amongst Mulago units alone since the inauguration of the campaign is shown by the following table:—

		1921	*1922*	*1923*
1.	New cases	3,418	5,346	8,327
2.	Total number of cases treated ...	3,418	6,298	11,505
3.	Attendances	36,011	113,158	241,091
4.	Number of auxiliary centres ...	1	4	5
5.	Patients admitted to wards	415	1,174	2,585
6.	Aggregate number of in-patient days ...	11,961	43,841	49,425
7.	Mercury injection	9,373	34,439	82,687
8.	Salvarsan substitute injections ...	1,098	2,713	8,930
9.	Other injections	1,103	4,506	10,179
10.	Dilatations of the urethra	328	896	1,643
11.	Surgical operations under general anæsthesia	31	169	549
12.	Serums tested by Wasserman or floculation method	2,508	3,159	5,763
13.	Other laboratory tests	384	62	1,518

2. *Standard of Cure and Treatment. Gonorrhœa in Men.*—Treatment by irrigation vaccines and urinary sedatives until the urine passed into two glasses is quite clear on two successive occasions with an interval of a week between them.

Gonorrhœa in Women.—Douches, tampons and local treatment through the speculum until all signs of discharge or inflammation have disappeared.

Primary and Secondary Syphilis.—A course of twelve weekly injections of mercury and six to ten injections of salvarsan substitute when available, followed by a rest from treatment of two to three months. A second course of eight weekly injections of mercury with three to six injections of salvarsan substitutes. Observation or a series of courses of eight weeks over a total period of two years, according to the results of the Wasserman test. No case is discharged as having completed treatment unless the full two years' course of observation and treatment has been adhered to. If any case had completed two years treatment and had been free from signs for eighteen months, he is discharged at his own request irrespective of the result of the Wasserman test; an attempt is made to induce him to continue treatment.

Tertiary, Latent and Congenital Syphilis in Adults.—In young and otherwise healthy adults, the treatment and standard of cure is the same as that of early syphilis. In old people and hopeless derelicts where the disease is deep rooted and practically incurable no attempt is made to do more than treat signs and symptoms.

Congenital Syphilis in Infants.—Sulfarsenol subcutaneously and inunctions of mercury ointment for as long as the mother brings the child. This is usually not longer than a month or two after loss of signs.

3. *Do Cases attend satisfactorily?*—From Table I in the return of this year it is not easy to form any clear idea of whether attendances were satisfactory or not. Of the 8,891 cases of syphilis who attended for treatment in the year, 1,822 or 20% defaulted from treatment before receiving any material benefit, and were presumably infective. 1,938 or 22% ceased attending after having completed one or more courses of treatment, but before the completion of two years treatment and observation. They showed no signs of disease and were presumably non-infective. The number of those who were cured, who died, or who were transferred to other units, was trivial. The remainder are expected to attend in 1924. The only clear fact here is that 20% of syphilitics who present themselves for treatment cease attendance before they receive any real benefit from treatment.

Of the 1,136 cases of gonorrhœa who attended for treatment 32% defaulted whilst still capable of conveying infection, 37% were cured. The majority of the remainder are expected to attend in 1924.

A clear idea of the manner in which the syphilitics attend may be obtained from a short analysis of these cases who commenced treatment in 1921, and were attending in 1923.

Disease.	No. who commenced treatment in 1921.	No. of those who attended in 1923.	Percentage.
Primary syphilis	113	25	22·1
Secondary syphilis	840	282	33·8
Tertiary syphilis	531	73	13·7
Congenital syphilis	214	17	7·9
TOTAL ...	1,698	397	23·4

As there is a difference between the attendances of men and women, the total of all cases of syphilitics is herewith shown by sexes:—

Sex.	No. who commenced treatment in 1921.	No. of those who attended in 1923.	Percentage.
Male	1,003	258	25·7
Female	695	139	20·0
TOTAL ...	1,698	397	23·4

The history in 1923 of these 397 cases was as follows :—

1. 70 were discharged after final test.
2. 183 were attending at the end of the year.
3. 7 defaulted without receiving material benefit from treatment.
4. 102 ceased attendance after completing one or more courses.
5. 34 were transferred to other hospitals.
6. 1 died.

Items 1 and 2 represent cases who attended for two years or over. The total 397 represents cases who attended on an average for eighteen months. From these figures and the figures given previously it seems fair to conclude that, within a generous margin of error :—

1. 20% of all syphilitics cease attendance without benefit, and probably remain infective.
2. 15% may be expected to attend for two years.
3. 9% may be expected to attend for 18 months.
4. 55% attend for one or more courses, and are relieved of signs and symptoms and probably rendered non-infective.
5. 1% die.

The percentage of satisfactory attendances is higher in males than in females, and in cases of early syphilis than in cases of late syphilis.

Without going into further details, I estimate that half the cases of gonorrhœa who attend are rendered non-infective by the time they cease to come for treatment.

4. *Treatment and New Cases.*—There is another indirect method of judging the effectiveness of treatment, and that is by the ratio between total cases treated and the number of effective attendances. In 1923, 1,135 cases of gonorrhœa attended for treatment 23,887 times, or on an average each attended on 21 occasions. Of these 1,135 cases many were first treated in 1922 and only attended a few times at the beginning of 1923 to complete treatment whilst others only first came for treatment at the end of 1923 and had no opportunity of attending more than a few times in the year. Consequently the average number of attendances per patient for those who were in a position to complete all their course entirely in the year 1923 must have been considerably over 21.

In syphilis, attendances as such count very little. The important factor is the number of injections received of specific drugs, mercury and salvarsan substitutes. It was not until the end of the year that salvarsan substitutes were available in the quantities required; consequently the following table deals with weekly mercury injections only.

Disease.	No. of cases treated.	No. of Mercury Injections given.	Ratio of Injections of cases.
Primary syphilis ...	461	4,243	9
Secondary syphilis ...	2,744	30,161	11
Tertiary syphilis ...	4,237	40,006	9
Congenital syphilis ...	1,449	5,881	4
TOTAL ...	8,891	80,291	9

The same argument applies here as to gonorrhœa. The average number of mercury injections each patient who attended through the year received must be considerably over nine. These figures are given more as a matter of interest than as an argument for efficiency of treatment. It would be a mistake to strain their significance.

5. *Cases and Attendances by Sexes.*—The following table shows attendances and new cases under diseases and by sexes:—

		Sy. I	Sy. II	Sy. III	Cong. Sy.	Soft sore.	Gon.	Stricture.	O. V. D.	N. V. D.	Total.
Attendances ...	M.	7,836	34,351	39,495	13,221	948	16,988	16,323	6,906	3,389	139,457
	F.	881	26,477	46,406	17,464	33	6,899	—	1,930	1,543	101,633
New Cases ...	M.	260	822	1,405	369	63	652	366	226	305	4,468
	F.	29	671	1,821	796	2	277	—	78	185	3,859

The relatively large attendance amongst women for congenital syphilis is accounted for by the fact that all cases of congenital syphilis in infants are included in the women's figures. The following points call for short comment.

(*a*) Syphilitic women appear less inclined to seek relief early in the disease than do the men. Whilst both cases and attendances for primary and secondary syphilis are higher in men than in women, the women's figures exceed the men's considerably in tertiary syphilis.

(*b*) The ratio of attendances to new cases is more or less the same for both sexes, though from para. 3 of this section it appears that the percentage of cases who attend satisfactorily for the treatment of syphilis is a good deal lower in women than in men.

(*c*) Comparatively few women attend for gonorrhœa. Gonorrhœa in the women is often passed unnoticed by the patient. Treatment on the obstetric chair, even when given by a woman, is not popular with native women.

(*d*) That the relative unpopularity of medical treatment with women is not confined to the treatment of venereal disease only is shown by the figures for non-venereal diseases

(*e*) Of the total attendances 42% were women, and of the total new cases 46% were women. In 1921 below 30% of the total attendances were made by women; in 1922, 34%. This year shows a very marked improvement in this direction.

6. *Ante-Natal Work.*—During 1923, 285 pregnant syphilitic women presented themselves for treatment at some period of their pregnancy. The results of these pregnancies were as follows:—

83 mothers bore live babies who were alive at the end of the year.
18 mothers bore live babies who died from various causes before the end of the year.
9 babies were stillborn.
21 women miscarried.
80 women had not born their babies before the end of the year.
74 women failed to report the result of their pregnancies.

It would have been possible to make a more complete analysis by the stage of disease and amount of treatment received in each case, but the small figures seemed hardly to justify this.

Five women were delivered of their babies in the wards, but there were no facilities for this work during the year

7. *Infantile Mortality Returns.*—Infantile mortality returns were introduced in 1923 for the first time in any part of the Protectorate. Returns were submitted for the Kingdom of Buganda only.

	Population.	Number born.	Number who died in first year of life.	Birth rate per 1,000 population.	Infantile mortality rate per 1,000 born.
Males ...	368,769	7,180	1,701	—	236·9
Females ...	397,492	7,116	1,544	—	217·0
Both Sexes ...	766,261	14,296	3,245	18·6	226·9

These returns cannot be considered reliable. I believe that both the birth rate and the infantile mortality returns are considerably understated, particularly the latter. The significance of this first return is negligible, but in the future information given should be invaluable.

8. *Conclusions.*—From the preceding paragraphs it is possible to form some idea of the degree of success of the anti-veneral campaign in Uganda in the past year. The growth of work undertaken has been most satisfactory, particularly so in the extension of the benefits of the campaign to hitherto untouched districts. The standard of cure and treatment is not as high as that accepted in England, but is a practicable standard for this part of the world, and is largely effective. When the nature of the people dealt with is taken into consideration, the manner in which cases attend for treatment appears very satisfactory, particularly amongst the syphilitics. Only 20% of all syphilitics abandon treatment before receiving real benefit, and this figure is very much lower for cases of early contagious syphilis. The majority of the defaults are amongst cases of late syphilis and congenital syphilis. The ratio of treatment given to cases treated is high. The difference in attendances between males and females is well on the way to being adjusted, and it is expected that in the near future men and women will attend in equal numbers. Ante-natal work, although still small, shows a marked increase in numbers over previous years, and the results are better. In the Infantile Mortality Return has been introduced a method by which the effects of the anti-venereal campaign can be demonstrated much more clearly in the future. The extension and development of the anti-venereal campaign in 1923 has been satisfactory in every direction.

V. THE POSSIBILITY OF THE EXTENSION OF ANTI-VENERAL METHODS TO OTHER DISEASES.

There are three main types of disease which are best served by quite different methods:—

(1) Cases in which the disease is mainly an individual disability, and is of no direct importance to the race or tribe.
(2) Cases of acute epidemic and endemic infectious diseases.
(3) Cases of transmittible disease, where the result of the disease is relatively of greater importance to the race or tribe than to the individual.

Group 1 includes the great bulk of ordinary hospital and private practice, including all surgical work. It is by far the most expensive of the three groups to deal with, involving the greater part of in-patient practice. It requires a higher degree of individual ability on the part of the practitioner, both in diagnosis and treatment, than the other groups, and can only be practised satisfactorily by qualified medical men; *i.e.*, it is not open to unqualified assistants, native or imported, to pursue this branch of medicine with success. It is not adaptable to routine methods.

Group 2 is dealt with all the world over by special legislative measures and remains apart from the other groups.

Group 3 includes venereal disease as its most important member in Uganda, and a number of other conditions, notably yaws, leprosy and ankylostomiasis, the diagnosis and treatment of which are comparatively simple, and are adaptable to routine methods. Practice in this group can be successfully undertaken by unqualified assistants. In consequence practice in this group is cheaper than in either of the other two groups. Owing to the larger numbers than can be treated, and the danger of this group of diseases to the community as a whole, the results obtained are of more importance to the race than results obtained in group 1.

The essential features of the anti-venereal campaign are:—

(1) The keeping of permanent records of all cases treated.
(2) Routine laboratory assistance in diagnosis and control of treatment.
(3) Routine treatment.
(4) A fixed and conventional standard of cure.

By these means a high standard of anti-venereal work is carried out at auxiliary centres by native assistants working alone, under a system of weekly supervision by qualified medical officers.

Other diseases to which this system might be applied with great saving of money and with results far wider than those at present recorded are the following:—

Leprosy.—The disease is well known to the native and diagnosis from clinical signs is not difficult to him, though there is naturally a tendency to error in diagnosis. It is easy to train natives to take nasal smears or to excise nodules, and to stain and examine for *lepra bacilli.* Treatment by chaulmoogra derivatives is effective, easy of administration, and adaptable to routine methods.

Yaws.—Differs hardly at all from syphilis in its diagnosis and treatment.

Ankylostomiasis.—Widespread throughout the Buganda Kingdom, this disease is probablysecond only to syphilis in its bad effect on the community. The diagnosis of ankylostomiasis by the microscopical examination of stools is readily taught to natives. Treatment by carbon tetrachloride or chenopodium is comparatively safe, simple and inexpensive. Diagnosis, treatment and control of the disease are adaptable to routine methods.

Helminthiasis other than Ankylostomiasis.—The Baganda are worm-ridden to a degree. The effect on the general health of the community is inclined to be underestimated. Diagnosis and treatment is simple and could be carried out on routine lines by native assistants.

Amœbic Dysentery.—Acute attacks of amœbic dysentery can only be treated inwards. A large proportion of natives, however, carry the parasite either without symptoms, or with trivial signs and symptoms. The microscopical diagnosis is difficult, and treatment is not easy. But in certain cases using natives trained more highly than the average, the routine diagnosis and treatment of carriers might be attempted.

The adoption of methods at present restricted to venereal diseases, to some or all of the diseases mentioned above would, I believe, prove a most economical advance in the medical work of the country.

VI. STAFF.

Without labouring a point which has received and is receiving considerable attention, I take this opportunity of recording my opinion that the future of medical work in this country depends on the native medical assistant. Money spent on the adequate training of native medical staff must bear a richer harvest than money spent more directly for the immediate benefit of the sick. A good central hospital for practical teaching and a specialised selected European teaching staff appear to be the nucleus on which the growth of medical progress in Uganda depends.

The educational work attempted at Mulago in 1923 was mainly practical training in wards and in the out-patient department. One series of lectures on elementary subjects connected with medical work was completed. About 20 native assistants, trained in general methods and capable of doing intravenous injections, were posted to other districts and gave satisfaction. A number of natives belonging to tribes other than Baganda were sent in for training from their districts with a view to returning to work amongst their own people on the completion of training. All were still at Mulago by the end of the year. The progress made in this direction by the end of the year was satisfactory, but the work accomplished merely brushed the fringe of what remains to be done in the future.

VII. YAWS AND SYPHILIS.

The differential diagnosis between yaws and syphilis is extremely difficult in many cases. This becomes very apparent when reference is made to standard text books on the differential diagnosis of these two diseases. The points given largely refer to differences in the diseases regarded as a whole, and not marked clinical differences of a particular case. Typical secondary yaws is readily distinguishable from typical secondary syphilis. Unfortunately in countries where both are prevalent, the majority of the cases are not typical, and differentiation is extremely difficult. The diagnosis is even harder when it has to be made between tertiary yaws and tertiary syphilis, and is in many cases impossible. Certain late syphilitic lesions are typical of syphilis and are not reproduced by yaws. But in my experience there is no yaws lesion that cannot be and is not commonly reproduced by syphilis. The consequence of this is that the diagnosis between syphilis and yaws is very largely a matter of personal convention. *A*, who works in a community amongst whom syphilis is rare, is in the habit of calling all lesions of a certain class yaws. *B*, on the other hand, who sees more syphilis than yaws, calls the same lesion syphilitic. The accepted aim of treatment in yaws is the relief of signs; in syphilis, the eradication of disease from the system, a matter of years. This confusion of diagnosis must lead to disastrous results, in that it labels cured many cases of what were probably syphilis, after the relief of signs only.

Again, it is certain that yaws is so easily and rapidily cured that it is eradicated from the body when the last signs have disappeared, and that it has no effects on the race as a whole, as syphilis has. It is only comparatively recently that the far-reaching effect of syphilis on a community has been universally recognised, and that the dangers of under-treatment have been realised. The analogy betwen the two diseases is so close that the possibility of yaws as a cause of race degeneration must be borne in mind.

For these two reasons, (1) that the diagnosis of yaws must serve as a cover for many cases of syphilis who consequently receive inadequate treatment, and (2) that yaws may not necessarily be " cured " when signs have disappeared. I advocate that no difference in treatment between yaws and syphilis be officially accepted, and that endeavours be made to treat cases of both diseases over long periods, and irrespective of the loss of signs or symptoms.

VIII. ACKNOWLEDGMENTS.

That the work at Mulago increased to the extent it did without loss of efficiency was made possible by the devotion and self-sacrifice of the European staff.

To Dr. W. L. Peacock was due the great extension in surgical work. The advice and help given by Dr. C. H. Marshall in major surgery was invaluable. The advice and co-operation of all administrative officers of the districts in which centres were situated was deeply appreciated. I should like also to record an appreciation of the help given to Mulago by Major H. B. Owen, D.S.O., Medical tutor, Makerere College, not only for his work in connection with the eye clinic, but also for the advice and help in matters relating to native staff.

W. LESLIE WEBB,
Senior Medical Officer, Mulago.

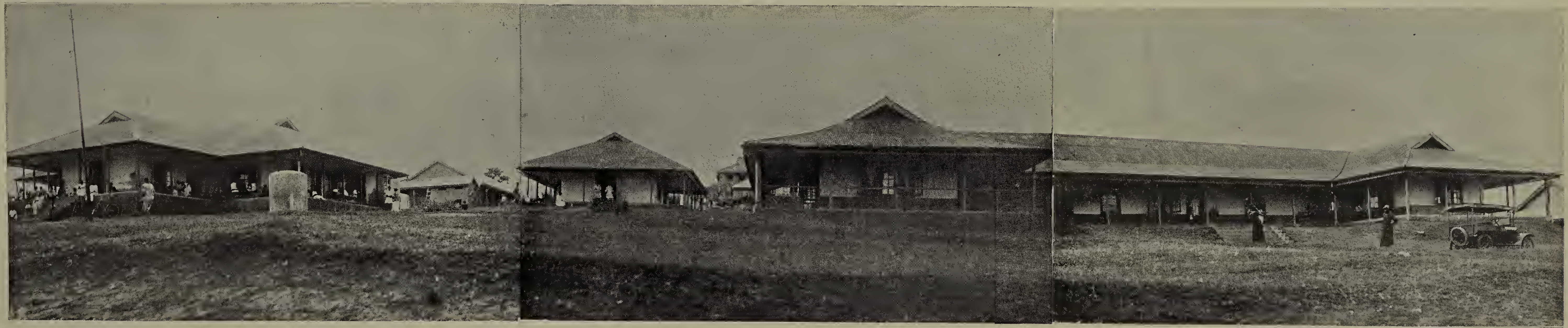
TABLE I.

		Primary Syphilis.	Secondary Syphilis.	Tertiary and Latent Syphilis.	Congenital Syphilis.	Soft Sores.	Gonorrhœa.	Stricture.	Other Venereal Diseases.	Non-Venereal Diseases.	TOTAL.
1	Attendances	8,717	60,828	85,902	30,685	981	23,887	16.323	8,836	4,932	241,091
2	Cases registered in 1921 and treated in 1923	25	282	73	17	...	3	22	1	1	424
3	Cases registered in 1922 and treated in 1923	147	969	938	267	12	203	148	61	9	2,754
4	New cases 1923	289	1,493	3,226	1,165	65	929	366	304	490	8,327
5	Total cases treated 1923	461	2,744	4,237	1,499	77	1,135	536	366	500	11,505
6	Discharged after completion of courses and tests	4	65	12	...	60	423	31	168	190	953
7	Ceased attending after completion of one or more courses but before final tests	98	667	841	332	1	75	129	22	14	2,179
8	Ceased attending before completion of one course	92	396	951	383	12	367	125	73	167	2,566
9	Died	...	8	49	64	...	6	10	3	6	146
10	Transferred to other Hospitals ...	19	102	92	38	...	16	23	12	10	312
11	Attending 1924	248	1,506	2,292	632	4	248	218	88	113	5.349
12	TOTAL	461	2,744	4,237	1,449	77	1,135	536	366	500	11,505

"Other Venereal Diseases" included 140 cases of yaws and 33 cases of granuloma venereum.
"Non-Venereal Diseases" include 50 cases of leprosy.

MULAGO—PANORAMIC VIEW.

(FRONTAGE ONLY.)



ADMINISTRATIVE BLOCK.

Out-Patient Department.

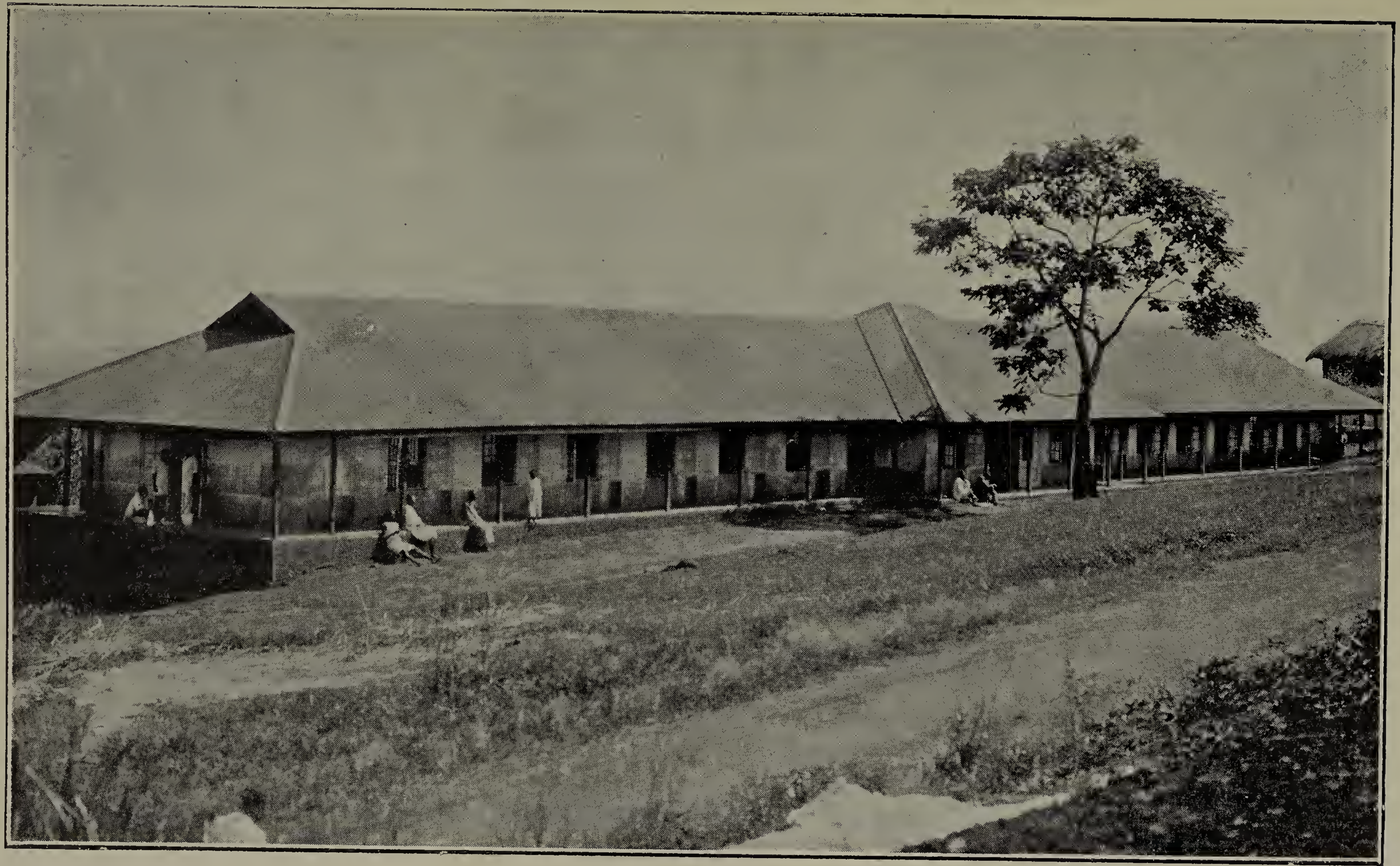
New Cubical Ward (being built).

Operating Theatre.

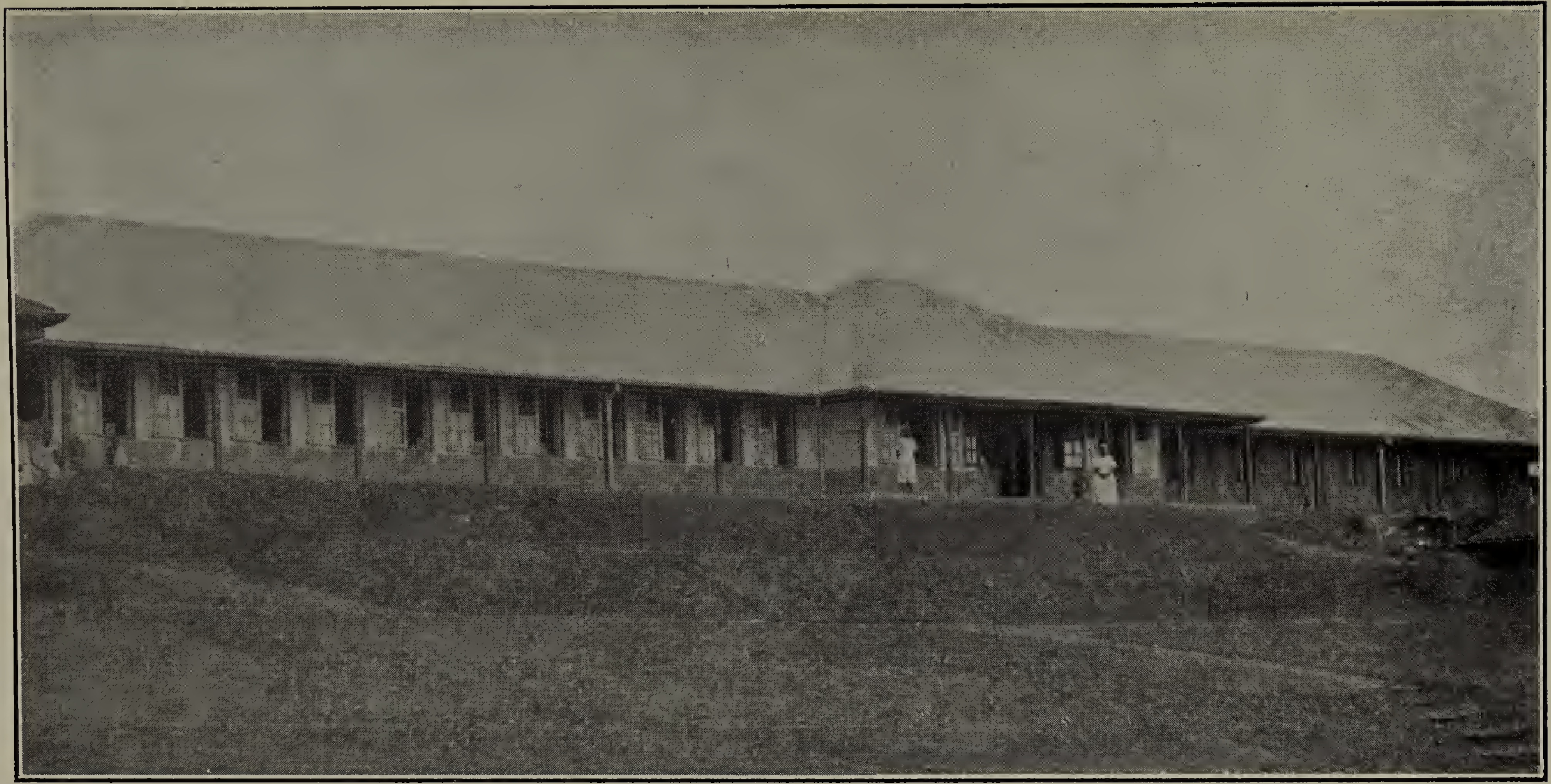
Office.

Sisters' Office and Duty Room.

Laboratory.



MULAGO—MEN'S GENERAL WARD.



MULAGO—WOMEN'S WARD.

London School of Hygiene & Tropical Medicine
LIBRARY
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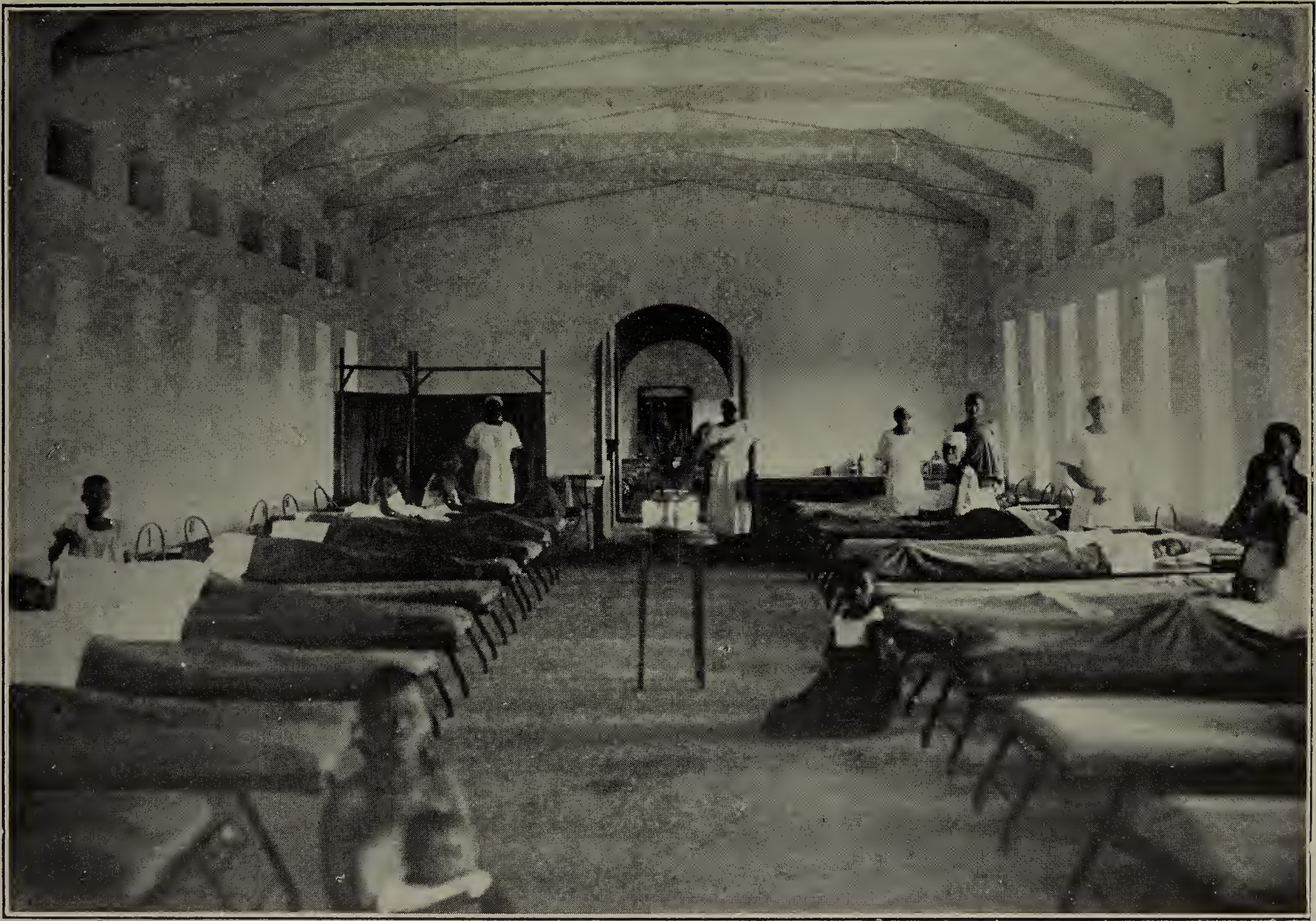

MULAGO—INTERIOR, WOMEN'S WARD.

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APPENDIX No. IV.

Report of Senior Medical Officer i/c Sleeping Sickness for 1923.

NORTHERN PROVINCE.

Before leaving Uganda in March I made a complete tour of the Madi country to inspect the clearings which were taken in hand early in 1922 when Mr. Busby was engaged as Inspector.

I found that most admirable work had been done by the natives: all the crossings of rivers and most of the watering places in both East and West Madi were inspected and it was obvious that there could be very little contact between people and fly in those places.

Every opportunity was taken to intrigue the natives with the idea of planting cotton or foodstuffs on the clearings so as to recoup themselves for the labour put into the clearing.

Thus the situation in Madi in March was greatly improved, and I confidently expected a great diminution in the *incidence* of the disease while it was realised that for some time to come there would be heavy mortality from the deaths of those already infected. A request was made that District Officers would send regular (quarterly or other) returns of deaths reported by their chiefs from Sleeping Sickness by which in a little while some idea might be gained of the efficacy of the prophylactic measures adopted.

In September the Provincial Commissioner reported very favourably that "the people who had been moved into a constricted area appeared to be content"; that "the Fathers at the Italian Catholic Mission said that from their own observations they considered that Sleeping Sickness was less prevalent than it had been"; that "in nearly every area the cotton was properly looked after"; that "food has not been neglected on account of the Sleeping Sickness clearings" and that "he was in complete accord with my report on the value of Mr. Busby's services."

The Provincial Commissioner also commented on the fact which has long been recognised as a difficulty in the prevention of Sleeping Sickness: he wrote, "the group of people formerly under Awich Ali who are largely infused with Acholi blood are showing signs of Sleeping Sickness recently acquired. This people *will* hunt as they have always done and control of this is difficult as they are not convinced that Sleeping Sickness is caused by the Tse-Tse fly."

This state of affairs is rendered worse by the fact that most of the hunting takes place during the dry season when game finds shelter along the banks of the fly-infested streams. I obtained clear evidence on a former tour that two men had only recently become infected in this way.

Mr. Busby, the Sleeping Sickness Inspector, was dismissed from the Service at the end of August for transgression of the Game laws, and the supervision of clearing naturally devolved entirely upon the district office.

The District Medical Officer, Arua, reported after a tour in September that the "safari had conclusively proved that the clearings had justified themselves as it was possible to go round Madi on the main roads and see no Tse-Tse at all." *He also reported, however, that the clearings were rapidly becoming overgrown as a result of lack of supervision.*

For preventive work of such importance to the country whose chiefs are as yet unaccustomed to exert authority the natives cannot be relied upon when left to themselves.

Under the present system certain areas are open for habitation and use by the issue of instructions stating what amount of clearing is necessary and what are the limits of the habitable area, etc. Unless these conditions are observed the area is unsafe, but experience has shown that the natives require thorough supervision to enforce the conditions.

Owing to shortage of medical staff there has been no Medical Officer available for purely Sleeping Sickness work in the Nile district.

At the commencement of 1924 I intend to re-examine the whole situation in Gulu and Madi; in Chua also there is need for further examination of the inhabitants along the northern border owing to representations from the Sudan.

WESTERN PROVINCE.

Reports have been received from the Medical Officer, Fort Portal, of the prevalence of Sleeping Sickness among the Ba'amba living in the Semliki Valley.

In 1921 I had heard from the White Fathers that this was so and endeavoured to get the people up for examination on the spot. The chiefs absolutely failed to collect the people and nothing could be achieved. Now that these shy folk have begun to come up for treatment to Fort Portal voluntarily I hope a thorough examination of both country and people will be possible in the middle of the next year after the tour in the North.

EASTERN PROVINCE.

(*a*) *The Mpologoma Area.*—Endeavours to keep the shores of the Mpologoma swamp cleared by voluntary settlers have failed. Meanwhile matters are being left *in statu quo ante* so that some idea may be obtained of the natural morbidity of the disease in this area. The Sleeping Sickness Inspector was instructed at the commencement of the year to make a thorough census of the population of a certain area and to watch these people carefully. In the opinion of the Administrative Officer enforced clearing on the Mpologoma could not be carried out unless the Medical Department could prove a mortality high enough to justify this.

(*b*) *Busitema.*—Early in the year a section of fly-infested country in Budama was carefully examined in company with the Sleeping Sickness Inspector, Mr. Chas. O'Connor, who had previously made a thorough survey of the whole area in question and mapped out the distribution of fly and people. As on previous occasions this work was done in a most painstaking manner deserving high commendation. After consultation with the District Officer it was found necessary to proclaim a new "Busitema Sleeping Sickness Area" and to advise the evacuation of a certain part of this.

THE LAKE VICTORIA SLEEPING SICKNESS AREA.

As I was on leave for a great part of 1923 I had no part in further development of this area.

According to the Bacteriologist's report for 1923 there were 6,401 repatriates on the Sese Isles at the end of August; on Buvuma Isle there were 3,852 at the end of December; in the reclaimed areas on the mainland shores about 1,000. There were no cases of *trypanosomiasis* found among the fishermen, of whom nearly 5,000 have been registered and examined bi-annually. Three cases were discovered in the Lake area who may very probably have been infected at Jinja, where Tse-Tse is abundant below the limits of the township.

There is no doubt that the restrictions on the free movement and habitation of Lake Victoria have now been relaxed to a point almost beyond the limits of safety, and active steps are being taken to investigate precisely what are the limits of safety so that a definite border line may be laid down.

It will probably be necessary to concentrate the people now rather scattered among some of the smaller islands where they are not sufficiently numerous adequately to protect their landing places.

The danger to the Lake Victoria area lies in the continuance of *trypanosomiasis* along its eastern (Kenya) shores, and the lack of regulations controlling the movements and life of the lake-shore population there.

The question of single control over the whole of the shores of Lake Victoria is occupying the Reclamation Officer, who is immediately concerned with the policy of development of the Lake shore.

CONCLUDING REMARKS.

Finally, it is my very strong opinion as a result of experience in Sleeping Sickness affairs that the administration will never be satisfactory or consistent unless special administrative officers are appointed for this duty alone as in the Lake Victoria area, with a continuity of policy and a knowledge of the work which a District Officer, harassed with a multiplicity of other matters and changed from one district to another, cannot acquire. To supervise clearings and enforce the regulations in the Nile district would be work enough for one such officer, another would be required for Lake Albert, Lake George, Lake Edward, and the Buamba Sleeping Sickness area; and the Mpologoma Sleeping Sickness area with Busitema might require a third.

Supervision of clearing to an extent now quite out of the question and yet absolutely necessary if the clearings are to be protective, and enforcement of regulations regarding registration of vessels and issue of fishing permits would form the duties of such officers, not to mention patrol of closed areas. The detailed knowledge acquired by these officers of the distribution of population of infected areas and their needs would afford the utmost assistance to the Medical Department in its effort to control the disease through control of the population.

As regards treatment, shortage of medical officers has rendered this impossible hitherto. Segregation camps I consider unsuitable, as the natives of Gulu district are very shy of such measures and nothing less than a large armed police force would control the camp.

If all watering places for men and animals and crossings of streams are properly cleared the disease is unlikely to affect the general community, although individual fishermen and hunters may from time to time become infected. But treatment is an important line of attack, and even if it can only be partly efficacious in *curing* it can help greatly by sterilising the blood of infected individuals so that they cease to infect Tse-Tse.

With the staff at present available the only practicable wholesale treatment is that of *Atoxylisation* at the hands of natives trained for the purpose.

I therefore propose to engage three such men who would be stationed in the Acholi, East Madi, and West Madi areas of Gulu district, and provided with porters so that they would be constantly on the move and work among the people in their own homes.

The present alarm of the natives when a Medical Officer appears on the scene with the intention of examining the population by gland puncture would, I think, be quieted by such a method of treatment. It has been greatly developed by the French in their African possessions with excellent results, great *epidemic foci* having been stamped out.

Such a procedure of course requires supervision by a Medical Officer, and one is urgently required for whole-time Sleeping Sickness work in the Nile infected area. At the time of writing there is no Medical Officer at Gulu or Kitgum for routine district work, and an adequate attempt to attack the Sleeping Sickness in Gulu district is impossible.

G. D. HALE CARPENTER,
Senior Medical Officer, i/c Sleeping Sickness.

APPENDIX No. V.

Annual Report of Government Dental Surgeon.

Sir,

I have the honour to submit to you my Annual Report for 1923. During six weeks of the year I was on leave.

The following Tables will give the treatment of Officials:—

(i)	Appointments	876
	Officials treated	264
(ii)	The following conditions were treated:—	
	Caries Simplex	565
	Extractions	136
	Pulpitis	54
	Abscess	34
	Odontalgia	13
	Periodontitis	42
	Erosion	35
	Gingivitis	19
(iii)	Conservation work:—	
	Synthetic Porcelain and cement	167
	Ag. Amalgam	390
	Cu. Amalgam	12
	Per. Gutta Percha	39
	Temp. Gutta Percha with dressings... ...	160
	Scaling and Cleaning	181
	Ag. No. 3 Applications	56
(iv)	Prosthetic work:—	
	Dentures	36
	Repairs to Dentures	51
	Crowns	24

(v) The following stations beyond Kampala and Entebbe were visited:—

Jinja 4 visits; Fort Portal, Mubende, Hoima, Masindi, Butiaba and Masaka each 1 visit.

I have the honour to be,
Sir,
Your obedient servant,

G. STANLEY BATEMAN,
Government Dental Surgeon.

The Hon'ble,
The Principal Medical, Officer,
Uganda.

APPENDIX No. VI.

The Treatment of Plague in Uganda.

By C. H. Marshall, M.B., B.S. (*Lond.*) M.R.C.S., L.R.C.P., *Senior Medical Officer, Uganda, Surgeon i/c European Hospital, Kampala; and Rai Sahib Achhru Ram, Assistant Surgeon, Kampala.*

The Uganda Protectorate is but rarely free from sporadic cases of Plague, while from time to time something of the nature of an epidemic occurs. Of recent years there have been three such outbreaks in 1917, 1920 and 1923-24, centring chiefly round and about Kampala—the largest town in the Protectorate.

The question of treatment has offered great difficulties, as though towards the end of an epidemic some cases recovered the majority of patients have died; and the fact that but few cures were effected did not encourage patients to report the disease. In 1917 one of us (A.R.)* treated 103 cases by intravenous injections of Iodine, but only 16 of these recovered.

In 1920 there was a severe outbreak of Plague in the Indian Bazaar in Kampala, and 68 cases were treated by various methods, and the late Dr. C. J. Baker, Principal Sanitation Officer, reported as follows:— †

	Cured.	*Died.*
Tinct. Iodine intravenously	19	31
Tinct. Iodine orally	2	2
Tinct. Iodine injected into the bubo	1	—
Tinct. Iodine Eusol intravenously and Tint. Iodine into the bubo	—	2
Eusol intravenously	—	2
Tinct. Iodine, Thymol and Camphor, injected into bubo ...	2	3
Acid Carbolic orally without special treatment	—	1
	27	41

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* Appendix VIII. Annual Medical and Sanitary Report, Uganda, 1917.

† Appendix V. Annual Medical and Sanitary Report, Uganda, 1920.

Dr. Baker went on to say in his report, "The treatment of the cases, for want of proper hospital accommodation, had to be undertaken in grass "bandas" on native bedsteads so that a case mortality of 63% among those who were seen early enough to attempt curative treatment is in my opinion a low figure in the circumstances."

Obviously, however, the results quoted above were far from satisfactory, and the present writers endeavoured to find some better method, and, in consequence of a letter in the "British Medical Journal" of July 22nd, 1922, from Mr. Ram Nansoor, M.B., B.S., commenced the treatment of cases of Plague by intravenous injections of Neokharsivan. The first results were most striking—six cases so treated all recovered, although two were of the septicæmic type, their finger blood being found swarming with *B. pestis*.

The seventh case did not give such a happy result, as the patient had been ill for three days, and when seen was collapsed, and died in a few hours after admission to the Isolation Camp. During 1923 we have continued to treat plague cases by intravenous arsenical preparations, and the results are encouraging, although not comparable with those in 1922.

The figures were as under (1922 cases not included) :—

Variety of Plague.	Total.	Cured.	Died.
Septicæmia	2	2	—
Pneumonic	2	—	2
Bubonic (advanced cases)	11	2	9
Bubonic (early cases)	11	8	3
Septicæmic and Bubonic	1	1	—
	27	13	14

Cases treated by Iodine or other methods :—

	Total.	*Cured.*	*Died.*
Bubonic	6	1	5

If the advanced cases, *i.e.*, cases seen after second day of illness, are not included, so that the return is compared with that quoted by Dr. Baker, the results of 1922 and 1923 are : 23 cases; cured 17; died 6; *i.e.*, a mortality of 26% (including two pneumonic cases) as compared to the mortality of 63% favourably commented on by Dr. Baker.

The improvement in the case mortality cannot be ascribed to a corresponding improvement in the hospital facilities, which continue unsatisfactory.

Until the existing temporary Quarantine Camp is replaced by the permanent Isolation Hospital under contemplation but which has not yet been commenced, and trained nursing staff becomes available, the treatment and care of patients will be greatly handicapped.

The treatment we have adopted has only consisted of an intravenous injection of 0·6 Neokharsivan or Neosalvarsanobilin for an adult, or 0·4 gm. for children under 12 years. The temperature usually commences to fall at once, and reaches normal on the fourth or fifth day. If the temperature does not show a steady fall, the intravenous injection is repeated after 48 hours.

The buboes are never incised in the acute stage, but aspirated by means of a sterile syringe, for microscopic examination, tinct. of iodine being injected through the same needle. Hot fomentatians are applied frequently till the buboes suppurate or disappear without pus formation.

After about the tenth day it appears safe to incise the bubo.

The following cases may be quoted :—

Case No. 5.—Indian, male, admitted to the isolation camp within 24 hours of the onset of the illness, with a femoral bubo, temp. 104°, diarrhœa and delirium. Gland smear positive for Plague, and the finger blood also swarmed with *B. pestis* and continued to shew the organism until the sixth day of the disease.

The patient was violently delirious for seven days. The treatment adopted was an intravenous injection of 0·6 gm. Neokharsivan on admission, and repeated after 48 hours, 1 c.c. tinct. iodine injected into the bubo on the second day, and liq. adrenalin m. VII twice daily for three days until the diarrhœa stopped. Recovery was uninterrupted except for the breaking down of the skin over the bubo.

Case No. 6—Native, male, admitted early in the disease, with a temp. of 103, delirium and diarrhœa. On admission the blood was negative to Plague, and there was no bubo, but on the morning of the second day *B. pestis* was present in considerable numbers in the peripheral blood, and remained present until the sixth day of the illness. There was no inflammation of glands, but profuse diarrhœa and vomiting, which, however, responded to liq. adrenalin by the mouth. Except for the injection of iodine into the bubo, the treatment was identical with that in case No. 5. Recovery was complete on the 14th day.

In conclusion, it is a point of interest that the Neokharsivan originally used appears, to us, to give better results than the injections of Neosalvarsanobilin employed subsequently, while there is no doubt it is essential that treatment should be commenced as early as possible in the disease, in order to obtain the best results.

APPENDIX No. VII.

A Further Report on Intestinal Schistosomiasis.

Since my previous short report on this disease in August, 1923, we have examined a hundred specimens of fæces with the view of obtaining an idea as to the percentages of natives infected in this district. We have also included the figures obtained by routine examination of stools in the hospital. These figures are not entirely accurate, particularly the latter, as we were not especially looking for *S. Mansoni* ova, but for other Helminths, etc., as the clinical symptoms indicated. The large percentage of natives infected in this district will cause some shock. The majority, however, showed few severe symptoms, and with regard to our second list of figures numbers came to the hospital with other complaints.

This disease causes more serious symptoms in the young adult and the elderly than in the adult and middle-aged. Males appear to suffer more frequently than females.

2. List of 100 specimens examined with a view to ascertaining the percentage of natives infected with *S. Mansoni* and other Helminths:—

A. Total examined 100. Total infected with *S. Mansoni* 54.

Nationality.	*Examined.*	*Infected.*
Lugwari	59	30
Alur	20	12
Madi	14	8
Kakua	2	1
Banyoro Baganda Nubi Acholi	4	2
U.S. America ...	1	1
TOTAL	100	54

Tribes.	No. of fæces examined.	*S. Mansoni.*	*Ankylostomes.*	*A. Lumbricoides.*	*T. Trichiura.*	*Cestodes.*
Lugwari	59	30	56	38	1	1
Alur	20	12	18	11	1	—
Madi	14	8	13	8	—	1
Kakua	2	1	2	1	—	—
Banyoro	1	1	1	1	1	—
Baganda	1	—	1	—	—	—
Nubi	1	1	1	—	—	—
Acholi	1	—	1	1	—	—
U.S. America	1	1	—	—	—	—
TOTAL ...	100	54%	93%	60%	3%	2%

PERCENTAGE INFECTED OF VARIOUS TRIBES, *i.e.*, WITH *S. Mansoni.*

Lugwari	50·84
Alur	60·0
Madi	57·14
Kakua	Insufficiently examined to be of value.
Banyoro	
Baganda	
Nubi	
Acholi	
U. S. America	

B. From a total of 319 fæcal examinations during 1923 from January 1st to November 30th we have found :—

S. Mansoni	in	72 specimens.
Ankylostomes	in	148 ,,
A. Lumbricoides	in	91 ,,
T. Trichiura	in	19 ,,
Cestodia	in	6 ,,
A. Hystolitica	in	14 ,,

Lugwari show	24	*S. Mansoni* infections.
Alur ,, ...	17	
Madi ,, ...	9	
Banyoro ,, ...	12	
Baganda ,, ...	2	
Others ,, ...	8	
Total ...	72	

Total ... 72 cases plus 54 for the first hundred cases = 126 cases in all from a total of 419 fæcal examinations.

That gives us a percentage of 30·7 on our total examinations which we consider errs on the small side.

We have not enclosed the figures of the various tribes in this series but have worked them out and show here the percentages of *S. Mansoni* only.

Lugwari = 19·67 per cent
Alur = 36·17 „
Madi = 25·0 „
Banyoro = 15·15 „
Baganda = 16·69 „
Others = 19·4 „

Percentages of *S. Mansoni* infections from 319 fæcal examinations.

These percentages refer to our 319 routine examinations.

3. The complaints and symptoms of the natives suffering from this disease are most indefinite and variable. Pain in the Epigastrium just below the ensiform cartilage associated with tenderness in the same place is the most frequent. Diarrhœa and intestinal pains except in acute cases are usually absent. Pains of a rheumatic nature are not uncommon. General weakness, loss of appetite and inability to work brings the patient to the hospital for examination for exemption of poll-tax. The elderly patient is usually emaciated and anæmic, frequently oedematous, and has free fluid in the abdomen. Acute cases are admitted with temperature 104 F., pulse over a hundred, and frequent calls to stool. They pass a blood-stained and mucoid stool. Our one American case was of this nature, but the temperature was 100 F. The face is usually thin and the eyes staring. A Von Grafe is not uncommon. No growths as pointed out in the text books have been felt by palpation or by digital examination of the rectum in this district. However, one was noted at Butiaba and was originally diagnosed as carcinoma, the patient was so emaciated, until examination of the fæces showed lateral spined eggs. This case I understand died at Masindi shortly afterwards.

4. Since our last report we have come to the conclusion that the majority of natives infected and showing symptoms pass stools which are much alike :—

(*A*) It is of a greenish yellow colour, watery, and contains a stringy fibrous residue. The smell is very foul and sour. Blood cells are usually seen under the microscope, but are seen in acute cases only by the naked eye. Patients in whom the disease has not as yet obtained the upper hand the motion is normal.

(*B*) *Microscopic diagnosis :*—The patient, a native, is given two ounces of Mag. Sulph in Peppermint water. The second or third motion is examined as soon as possible after passing. A little is centrifuged for five minutes, then put on to a slide diluted with filtered water well mixed and spread out on the slide. No cover slip is required. The 2/3 objective is quite powerful enough for these large eggs. Live miracidia are not infrequently noted.

(*C*) *The Blood* :—The few cases whose finger blood has been examined show a definite increase of the Eosinophile cells. This increase is not as great as stated in the text-books. The large mononuclear cells have also shown an increase. The other white cells were normal.

(*D*) *Urine* :—Lateral spined eggs have been found in the urine. Time has not allowed us to look for them in many cases to work out an average.

5. *Treatment* :—This is of course difficult with the unsophisticated native. They will take a few intravenous injections and as soon as improvement occurs they ask to go home, and if permission is not given they run away. Their confidence is, however, being gradually obtained, and they appear to prefer in some cases intravenous medicine to oral. We think this is due to the miraculous action of the organic arsenic preparations in yaws.

(*A*) *Antimony Tartrate* :—This drug would appear in most cases to be a specific. We give it as follows :—First injection $\frac{1}{2}$ grain in 5 C. C. normal saline into the vein. The dose is increased by $\frac{1}{2}$ grain every other day in normal saline until 2 or $2\frac{1}{2}$ grains is reached according to the health or tolerance of the patient. The first sign of intolerance is a severe bout of coughing, followed by a feeling of nausea, possible vomiting, and perhaps by a severe headache which may persist for some hours. At any sign of intolerance we drop the dose to the highest that was taken without trouble and give the injection on the fourth day. A strong patient will easily take one grain as a first dose. In acute cases improvement is shown frequently after the first or second doses and almost always after the third. The improvement is so marked that occasionally after three or four grains of Tartar Emetic the patient wishes to get up and go home. In two cases only has antimony failed to cause some improvement. They both left after a few injections and have since died. The one apparently from *Schistosomiasis* ; of the other we have had no definite report. We consider 25 to 40 grains will cure. Some cases, however, would appear to be cured after some 10 to 15 grains.

Up to the present date we have treated sixty-eight cases. They have had 521 intravenous injections representing about 800 grains of Tartar Emetic. We have had two swollen and septic arms. No patient has as yet complained of eye symptoms.

(*B*) *Emetine Hydrochloride:*—We have little experience of this; it has been tried on two cases only and neither responded in the number of injections equivalent to Tartar Emetic. We have now abandoned its use except for those cases with no superficial veins of a convenient size or who would appear too ill to take antimony. Our one American case was given 20 grains of Emetine in the Congo Belge. Lateral spined eggs were found from six weeks to two months afterwards, and from the symptoms and motions the helminths were still active. He is now having a course of antimony at Arua.

6. *Prevention :—Schistosomiasis* is so prevalent in this district that treatment would appear at present to barely touch the fringe of the disease.

From our experience children and women seem to be affected in far less numbers than men. This is probably explained by the fact that they do not bathe or swim in the water to anything like the extent that the men do. Here at Arua the Lugwari are very fond of swimming and bathing in the Anau river. Our American case was also in the habit of bathing in any water that was near when he was on safari.

Drainage of swamps and standing water, the cutting of all grass near the edge of streams and rivers would help to kill the offending snail.

The boiling or disinfecting of all bathing water and water for washing clothes, etc.

Professor Leiper recommends the disinfecting of drinking water with sulphate of soda. Apparently chlorine 1 in 1,000,000 has no effect on the *Cercariæ.* The free *Cercariæ* live for about 48 hours and then die if no appropriate host is accessible.

Little can be done in this area to prevent the infection of the native population except actually in the township area of Arua.

7. Time has been insufficient to examine a larger number of fæces to obtain a true percentage.

The native is most suspicious about these examinations. In the future we propose investigating the women and children to obtain a percentage of *S. Mansoni* amongst them and also how far the disease incapacitates these people.

P. H. RAWSON,
District Medical Officer,
West Nile District.

BALMUKAND GOPAL,
Sub-Assistant Surgeon,
West Nile District.

ARUA,
30TH NOVEMBER, 1923.

APPENDIX No. VIII.

Treatment of Dracunculus Medinensis with Intravenous Injections of Antimony Tartrate.

A short report on the Treatment of DRACUNCULUS MEDINENSIS with Intravenous Injections of Antimony Tartrate.

This report is not sent with the idea of it being a new treatment but to show the result of Antimony on the *Dracunculus Medinensis* in the West Nile. That this drug is of use in this condition we think is proved by the figures given below. Most of these cases would clear up in a comparatively short time if the patient could be kept in bed. The patients in this district will not keep still unless they are almost *in extremis* or have leg irons applied. The worm would appear to emerge more quickly after the injections or in some cases to be entirely absorbed in a very short time.

One case appears twice on the list. He developed the first worm in the right leg; this was cured in seven days with 6 grains of tartar emetic. He is an askari and was on full work during the interval of one month. A second worm appeared in the left leg and was cured in nine days with 6 grains. He had been previously treated with antimony for *S. Mansoni* in July, but had not had the full treatment, only having 7½ grains, refusing further injections.

It would seem from this case that the *Dracunculus Medinensis* is not affected by Antimony in its development stages or the period of development is much shorter than is at present supposed.

27 cases were treated and the following results were obtained:—

Average days in hospital	11·92
Average amount of Antimony	4·68 grains.
Two failures and twenty five-cured, giving a percentage of...	92·59

The two failures: one ran away after five days in hospital with a very swollen and septic leg. He refused to keep still. The second case was in 41 days but would not be content to lie down and finally ran away with a septic and swollen leg.

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District Medical Officer,
West Nile District.

BALMUKAND GOPAL,
Sub-Assistant Surgeon.

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